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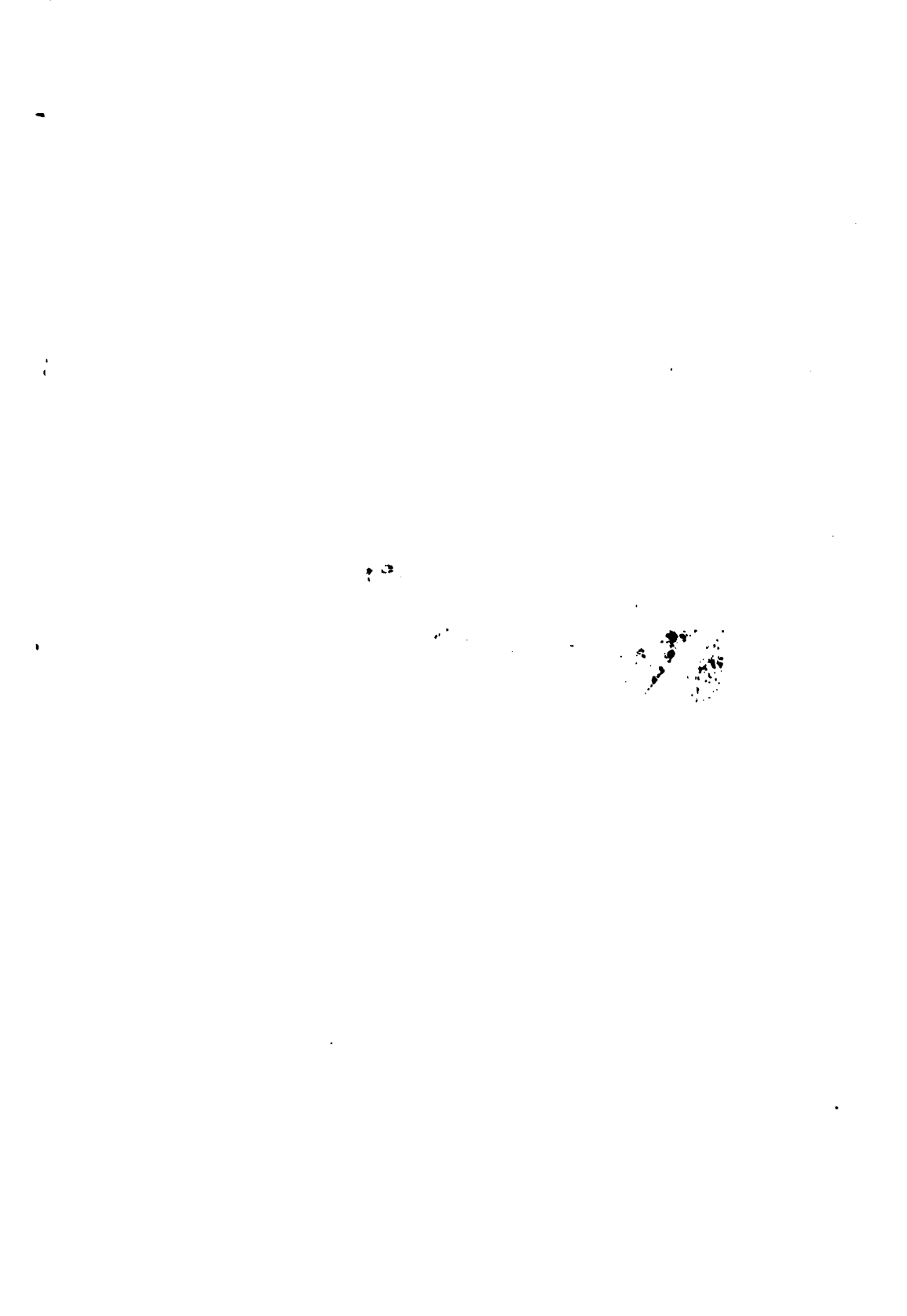
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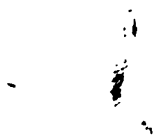
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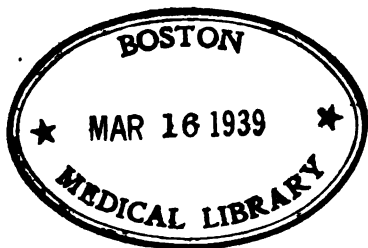


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J. D. EMMET, M.D.,
EDITOR AND PROPRIETOR

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THE
AMERICAN GYNAECOLOGICAL
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OBSTETRICAL JOURNAL.

JULY, 1898.

THE NATURE AND MANAGEMENT OF PUBERTY.*

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The proposition which I shall present for consideration this evening is this : Puberty is a period during which force is latentized in a peculiar manner for subsequent use in a special manner. The factors which interfere with the accumulation and latentization of this force, interfere with the subsequent act of reproduction in some or all of its phases, and the factors which, on the other hand, favor the accumulation and latentization of force at this period, favor the subsequent reproductive activities.

A broader proposition, practically inclusive of this one, has been formulated by Herbert Spencer and may be put briefly in these words: Expenditure of energy, and, in a certain sense the growth and development of the individual, are antagonistic to genesis; while high nutrition of the individual, and low expenditure of energy, are favorable to genesis. In illustration, he has collected an interesting mass of facts.

From the numerous instances given by Spencer, the following may be quoted: As to the phase relating especially to the antagonism between growth and genesis, these extracts are instructive:

“Taking first the wild members of this order [gallinaceous birds], which rarely breed more than once in a season, we find that the pheasant has from six to ten eggs, the black-cock from five to ten, the grouse eight to twelve, the partridge ten to fifteen, the quail still more, sometimes reaching twenty. Here the only exception to the relation between decreasing bulk, and increasing number of eggs,

* Read before the Chicago Obstetrical Society, April 15, 1898.

occurs in the cases of the pheasant and the black-cock; and it is to be remembered, in explanation, that the pheasant inhabits a warmer region, and is better fed—often artificially." . . .

"While a large mammal bears but a single young one at a time, is several years before it commences doing this, and then repeats the reproduction at long intervals; we find, as we descend to the smaller members of the class, a very early commencement of breeding, an increasing number at birth, reaching in small rodents ten or even more, and a much more frequent recurrence of broods: the combined result being a relatively prodigious fertility. If a specific comparison be desired between mammals that are similar in constitution, in food, in conditions of life, and all other things but size, the deer tribe supplies it. While the large red deer has but one at a birth, the small roe deer has two at a birth."

From vegetable life: "For some years it [the cocoanut] goes on shooting up without making any sign of becoming fertile. About the sixth year it flowers; but the flowers wither without result. In the seventh year it flowers and produces a few nuts; but these prove abortive and drop. In the eighth year it ripens a moderate number of nuts; and afterward increases the number until, in the tenth year, it comes into to full bearing. Meanwhile from the time of its first flowering its growth begins to diminish, and goes on diminishing till the tenth year, when it ceases. Here we see the antagonism between growth and sexual genesis under both its aspects—see a struggle between self-evolution and race-evolution, in which the first for a time overcomes the last, and the last ultimately overcomes the first. The continued aggrandizement of the parent individual makes abortive for two seasons the tendency to produce new individuals, becoming more decided, stops any further aggrandizement of the parent individual."

With reference to the antagonism between expenditure and genesis, the following extracts are illustrative: "The sand-martin, much the least of them [the swallow tribe], has usually six eggs; the swallow, somewhat larger, has four or five; and the swift, larger still has but two. Here we see a lower fertility associated in part with greater size, but associated still more conspicuously with greater expenditure. For the difference in fertility is more than proportionate to the difference of bulk, as shown in other cases; and for this difference there is the reason: that the swift has to support not only the cost of propelling its larger mass through the air, but also the cost of propelling it at a higher velocity." . . .

“Skulkers is the descriptive title applied to the water-rail, the Corn-Crake, and their allies, which evade enemies by concealment—consequently expending but little in locomotion. These birds have relatively large broods—six to eleven, eight to twelve, etc. Not less instructive are the contrasts between the gallinaceous birds, and other birds of like sizes but more active habits. The partridge and the wood-pigeon are about equal in bulk, and have much the same food. Yet while the one has from ten to fifteen young ones, the other has but two young ones twice a year; its annual reproduction is but one-third.” . . .

“These [the hare and the rabbit] are closely allied species of the same genus, similar in their diet, but unlike in their expenditures for locomotion. The relatively inert rabbit has five to eight young ones in a litter, and several litters a year; while the relatively active hare has but two to five in a litter. This is not all. The rabbit begins to breed at six months old; but a year elapses before the hare begins to breed. These two factors compounded, result in a difference of fertility far greater than can be ascribed to unlikeness of the two creatures in size.” “Perhaps the most striking piece of evidence which mammals furnish, is the extreme infertility of our common bat. The *Cheiroptera* and the *Rodentia* are very similar in their internal structures. Diversity of constitution, therefore, cannot vitiate the comparison between bats and mice, which are about the same in size. Though their diets differ, the difference is in favor of the bat; its food being exclusively animal while that of the mouse is mainly vegetable. What now are their respective rates of genesis? The mouse produces many young at a time, reaching even ten or twelve; while the bat produces only one at a time. Whether the bat repeats its one more frequently than the mouse repeats its ten is not stated; but it is quite certain, that even if it does so, the more frequent repetition cannot be such as to raise its fertility to anything like that of the mouse. And this relatively low rate of multiplication we may fairly ascribe to its relatively high rate of expenditure.”

The following may be cited to show the coincidence between high nutrition and genesis: “Equally clear proof that abundant nutriment raises the rate of multiplication, occurs among mammals. Compare the litters of the dog with the litters of the wolf and the fox. Whereas those of the one range in number from six to fourteen, the others contain respectively five or six or occasionally seven, and four or five or rarely six. Again, the wildcat has four or five kittens, but the tame cat has five or six kittens two or three times a year. So, too,

is it with the weasel tribe. The stoat has five young ones once a year. The ferret has two litters yearly, each containing from six to nine; and this notwithstanding that it is the larger of the two. Perhaps the most striking contrast is that between the wild and tame varieties of the pig. While the one produces according to its age four to eight or ten young ones once a year, the other produces sometimes as many as seventeen in a litter; or, in other cases, will bring up five litters of ten each in two years—a rate of reproduction that is unparalleled in animals of as large a size. And let us not omit to note that this excessive fertility occurs where there is the greatest inactivity—where there is plenty to eat and nothing to do.”

Coming to the human family it is not easy to find instances of similarly situated peoples illustrating these cases, but Barrow speaking of the Hottentots who, as slaves of the Boers are poor, ill fed, and hardworked, “seldom have more than two or three children; and many of the women are barren,” while the indolent and well-fed masters have not uncommonly families of twelve to twenty children.

Of the Kaffirs, a rich and indolent people, Barrow says: “They are said to be exceedingly prolific; that twins are almost as frequent as single births, and that it is no uncommon thing for a woman to have three at a time.”

The proposition, therefore, that low nutrition, and high activity are antagonistic to genesis, or fertility, and that low activity or low expenditure of force, and high nutrition are favorable to genesis, seems tolerably well established. High nutrition of course does not mean nutrition which leads to obesity, for it is a well-established fact, that in women who are obese, the reproduction functions are more or less deficient. Such women often fail to nurse their offspring, or even fail to become pregnant. Obesity, therefore, cannot be looked upon as an evidence of high nutrition, but rather as a manifestation of degeneration.

To turn now from the general proposition, to a consideration of the more special one: Puberty is the period during which the generative system in all its ramifications is developed. The time when this occurs is determined chiefly by heredity, and the development must take place during this predetermined time, or it cannot take place efficiently at all. By development is meant, both the anatomical increase, and the accumulation of the force with which the structure is endowed. But as the food supplies both the material and the force for the body, and as the amount of food which goes to supply force is so much greater than that which builds up and repairs struc-

ture, there can be no inaccuracy and much convenience in referring to the food from the force side only.

All of the force used by the organism comes from the food, and can be no greater than the assimilated food can supply. The activities of the body, both voluntary and involuntary, must first be supplied with force, and the residue may then be latentized or potentialized, if there be tendencies in that direction. That there is constantly a stock of latent or potentialized force in the body becomes apparent during the strain of an acute infection, when for various reasons, insufficient food is assimilated, and yet death does not occur. During puberty it seems not unlikely that much force is thus latentized in a special manner for special manifestation later. But it is evident that only so much force can be thus specially latentized as is in excess of that demanded by the usual activities of the organisms. If this doctrine be true, then high nutrition and low activity will favor genesis, and low nutrition and high activity will antagonize genesis.

The special data supporting the proposition as related to human puberty, may be arranged in three classes:

A. The evidence from disorders occurring in pubescent individuals, in whom the elements, antagonistic to genesis, predominate.

B. The evidence from disorders of the sexual organs later in life in individuals, in whom the pubescent period was neglected.

C. The evidence from the increased food normally demanded at this period.

A. Neurasthenic states are extremely common during puberty. Especially are they to be met in young high-school girls, who are overburdened with the work put upon them. I have often been astonished at the labor which some of these children have to bear. The hours of continuous application which the less mentally able among them have to put in daily are frequently greater than are usually demanded of seasoned adults, and the truly heroic efforts which they often make to bear their burdens, are simply pitiful. They are spending more force than their income, and they break. Such breaks are perhaps fortunate, for then attention is directed to their condition, and relief, rest, is afforded. But many, indeed the majority, manage to carry their loads, at least apparently, and the damage done is not so readily detected, but is none the less real. The headaches, the irritable tempers, the laziness, are but the indices of the neurasthenic state and if they do not receive the attention at this age, which a few years later they will under the name of nervous

prostration, it is because the enormous strain to which they are being subjected is not recognized. While the insanity of puberty is a well recognized condition, it is usually considered uncommon. But in its milder forms it certainly is not uncommon. Various delusions recognized as such by the victim, occur frequently, but are fought down and concealed, from a false sense of shame, to be disclosed later in life, when a broader mental horizon permits the former victim to realize that there was nothing dishonorable in the matter. The psychosis of this period I have reason to believe are much commoner than is generally supposed. The interesting feature is that they disappear as the active pubescent changes cease. Weir Mitchell's teachings certainly have a wide application at this time of life. A case illustrative of pubescent neurasthenia came under my care some six months ago. The patient, a girl of twelve, who had just begun to menstruate, had an attack of hives. The disorder itself was trifling enough, but her great depression, and her weird expression of countenance told of a deeper trouble. Upon questioning her I found that she was always tired at the end of the day, and greatly depressed at the end of the school week, and not always refreshed at the beginning of the next week. Deeming that the forces antagonistic to genesis were in the ascendant, I took her out of school, stopped her music, cut down her physical exertions, and had the gratification of finding her at the end of a few months a rosy, blooming girl, free from all neurasthenic manifestations, and gaining rapidly in weight. I do not imagine from this, however, that she is well, but shall keep up this programme, until the beginning at least of the next school year. Such cases as this are common enough, and the plan of management is an every-day affair, but to make the management most effective, a recognition of their true pathology is essential, and it is for the recognition of what I believe to be the most important factor in this pathology that I am now pleading. In this connection it must be borne in mind that the first menstruation is not the beginning of puberty, but is a phenomenon which occurs in the course of puberty. For at least a year before this sign, other evidences of the condition can be noted, and two or more years elapse after that before the active pubescent period is over. The absence in the boy of any sign analogous to menstruation does not make the recognition of the period in him any more difficult.

The following case has some points of special interest: Willie S., age 13 years and one month, was brought in September 16, 1896, for epilepsy. During the preceding two years he had had at least five

severe epileptic convulsions, presenting the complete picture of grand mal. His face had the peculiar dull expression of the epileptic. No special reason could be advanced for his trouble, and none was found upon examination except that he was growing rapidly. The rapidity of his gain in weight may be seen from the following table:

September 16, '96.....	Weight, 113
November 15, '96.....	" 122 ½
" 30, '96.....	" 125 ½
December 14, '96.....	" 127 ¼
January 4, '97	" 126 ½
" 27, '97.....	" 130 ½
April 6, '97.....	" 135 ¼
May 10, '97.....	" 127 ½
" 31, '97.....	" 130 ½
June 26, '97.....	" 133 ½
September 1, '97.....	" 133 ¼
October 11, '97.....	" 135 ½
" 26, '97.....	" 137
November 24, '97.....	" 140
December 24, '97	" 142 ¼
January 18, '98.....	" 143 ¾
March 16, '98.....	" 137 ½
" 28, '98.....	" 142 ½

During the year and a half that he has been under observation, he has several times had convulsions, once at the beginning of a febrile attack, and the other times following special and forbidden exertions. While it was not for a moment supposed that the pubescent changes constituted the totality of the causative factors leading up to the epilepsy, yet it was believed that they were a link of some importance in the chain, a link which could be broken and which might thus determine a change in the condition, and his progress has justified this assumption. First, he was engaged in the ordinary activities of life, and second, he was growing rapidly and the sexual organs and brain were demanding great supplies from his food, and he was unable to eat sufficient to meet all these demands. His growth could not be stopped, and ought not if it could, but his activities could be curtailed. This was done; he was taken out of school, and all physical and mental exertion, beyond the minimum necessary for the maintenance of health was forbidden, and his food pushed to the maximum. It was hoped in this way to secure enough force for

growing organs, by conserving the loss which was being diverted by controllable and relatively useless activities. How close the balance was, was shown by the recurrence of convulsions after a game of baseball one time, and a twenty-mile bicycle ride, another time, and the absence of convulsions in the absence of such exertions. The removal from school was made not because it was thought that mental work was especially harmful to the abnormal cerebral manifestation, but because the work saved was an element in the conservation of his energy in general.

B. Bottle-feeding of infants is very much commoner to day than it was a half century ago. In an old book on "Diseases of Children," by Eberle, published in 1833, to prepare a nursing bottle for a baby it is directed to push a quill through a cork. If bottle-babies had been as common as they are to-day, even although rubber had not been discovered, some better device than the quill would have been invented. It merely goes to show that the demand for such apparatus was slight. The great advances recently made in the artificial feeding of infants has not resulted entirely from increased knowledge of chemistry, but largely from the demand for skill in this direction. Moreover, failure to nourish infants at the breast has not arisen because of unwillingness on the part of mothers, but because of their inability to nurse. Failure of lactation means failure in part of the reproductive functions.

On another hand, we find that gynæcology has come into great prominence in these latter days, and while many causes have led to this, it will hardly be denied that demand for gynæcological services is one of them, from which it may be inferred that disorders of the genital tract are more common to-day than they were a generation or two ago.

Why are the women of to-day more prone to diseases of the genital tract, and to deficiency of lactation, both evidences of an inferior genetic power, than were their mothers and grandmothers, unless from some change in environment? I see in it evidence of defective pubescent nutrition, and trace it, in part at least, to the high pressure of modern life which to-day throws upon growing children new social duties, intellectual labors, and even new physical labors, with consequent diversion of energy into channels of immediate activity, which should be potentialized. An objection which will at once be raised is that the work of the gynæcologist is concerned largely with disorders of an infectious origin, and that the organisms which infect the adult, could hardly be much affected by attention to their hosts

during puberty. Directly, certainly not, but the soil can be, and in the infectious disorders it is the soil or nutritive element which is much more in need of study than the invading organisms themselves.

What have the mothers, who can not nurse their babies, to say as to the history of their own pubescence? I have not had an opportunity of going into this phase of the subject as fully as I hope to in the future, but such facts as I have been able to gather have shown that many of them were distinctly overworked at this period.

If the ultimate danger to the girl, because of the more important part which is hers in reproduction, is greater than to the boy, he has equal danger with her in the active period of puberty, and this time should be watched in him, quite as closely as in her.

C. Children of the so-called uric acid or gouty type, are prone to the manifestation of eruptions, especially eczemas, erythemas, and herpes; to catarrhal disorders, more or less prolonged; and not infrequently have rheumatic or neuralgic pains. With such children even slight excess in the eating of meat, or oatmeal in some cases, will result in the production of some or all of the above-mentioned gouty signs. But with the advent of puberty this changes, and I have known a number of such children to eat largely, indeed enormously, of such food during puberty without having any of their old troubles; all going to show that they were using the food properly and needed it.

While it is contended that puberty is a period for high nutrition, and low activity, it is not contended that every child should be fed excessively at this time without reference to its factor of digestion or its oxidizing capacity, which later at puberty is apt to be low, or that its school work should always cease or its play be curtailed, but that these factors should be used as a guide and employed with careful judgment with reference to the child's total condition.

The following conclusions are submitted:

1. Puberty is the period for the latentization of force for reproductive purposes.
 2. This latentization requires a high nutrition, and relatively low activity for its best accomplishment.
 3. Failure to properly meet this demand leads immediately to the development of pubescent disorders, and ultimately to reproductive deficiencies.
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HOW TO RECONCILE MODERN EDUCATIONAL METHODS WITH THE DEMANDS OF HEALTH.*

BY BAYARD HOLMES, M.D., CHICAGO, ILL.

The growth of the American girl into womanhood generally begins at the end of the eleventh, or sometimes during the twelfth, or at the beginning of the thirteenth year, and it progresses with very great rapidity for a year and a half or two years.

The changes in the size and morphology of the sexual apparatus have, I presume, already been considered. It has been noticed that if the uterus and its appendages do not pass out of their infantile into the simpler adult condition before the end of the fifteenth year, they never attain the adult form at all. It has also been shown that the infantile tubes are a prolific cause of dysmenorrhœa, sterility, extra-uterine pregnancy, and they make also the course of any infectious pelvic disease much more serious and destructive.

The law of growth in the human body is one which has not been always considered in relation to the development of girls. The energies of the body rise and fall in each individual with a certain rhythm. Each swell of physical growth is designed to bring about certain morphological and functional conditions and when these conditions are not secured at the time Nature is accustomed to bring them about, there is absolutely no possibility of their completion and perfection in subsequent years. The maturity of the sexual apparatus and its function in the girl must be secured in that stage of development known as puberty. It is of all the periods of growth of the woman the most important for her future health, both physical and mental. Therefore, it is the one above all others which should be considered in the education and training of the girl. All the intelligence and care that it is possible for teachers and physicians to bestow upon her should be given at this time. Not only motherhood and subsequent health, but sanity and life-long happiness are dependent upon the perfection of pubescent growth and function.

It does not seem unreasonable, therefore, that the customs and prejudices of the time should be entirely laid aside in considering the proper education of the girl in and before pubescence. In the first

*Read before the Chicago Gynæcological Society, April 15, 1898.

place, it is to be recognized as a fact that our present educational methods, both at home and in school, are productive of imperfect women. The ever-increasing number of cases of breaking down, nervous prostration, dysmenorrhœa, sterility, and hysterical insanity, both among the highly educated and those who leave school and enter "gainful occupation" early in life, is recognized by all.

From my own study of this subject, I have come to the conclusion that many radical changes must be instituted in the care and rearing and education of girls. At the age of eleven or twelve, the little girls begin to show their approaching puberty by surpassing the boys, not only in height, but also in intellectual activity. They are taller, brighter, gentler, quicker, and stronger than boys of their own age.

As our public city schools and most private schools are now arranged, the boys and girls are educated together, having the same exercises, the same lessons, the same requirements, and the same female teachers. This seems to me the beginning of disasters. The girls should be at this time separated from the boys, the boys to go under the care of men and masculine discipline, and the girls to remain in the care of women of experience and education, who would consider the fact that this increasing sensibility and excitability is a part of the pubescent development, and should not too strongly encouraged.

In the girls' school in the city the occupations should be less and less desk or book study and more and more the exercise of the hand and eye and body. The ideal school for the girl will make the school-room into a house or home in which all the domestic duties will be systematically taught by actual exercise. The school-room for the twelve-year-old girl will have many stoves for the preparation of at least one meal a day; it will have several bed-rooms for the exercise of the art of decorating and preparing the sleeping-room. These domestic services will be performed, not for the purpose of educating good servant-girls or skillful house-wives, but for the purpose of developing the young girl physically and mentally. The cooking will become the basis of the study of physics and chemistry, as well as incidentally the exercise of English grammar and mathematics.

The preparation of the furniture for the sitting-rooms and sleeping-rooms will be done with the same educational idea. The sewing and the weaving will be made the basis of the study of the history of culture and civilization, and also an exercise of the lost domestic arts.

These school exercises will be most helpful in developing the body of the young girl by interrupted exercises of great variety and they will develop her mind by giving play to the imagination and by contact with real things, methods much neglected in our present educational system. The girl will become a handy, effective, self-reliant woman. It is possible that she will have no less skill in English composition, in mathematics, in a vital knowledge of history, than is secured by the present method of encasing the girl in a mahogany and cast-iron seat for six hours a day and cramming her by means of the memorizing and recitation method.

If it is said that this is wholly Utopian and ideal, I must insist that it is far more practical than the method now in vogue, which has proved itself so disastrously ineffective. In so far as this method has been undertaken in various progressive schools, such as that of Professor John Dewey, at the University of Chicago, and that of Colonel Parker in Englewood, and that of the University of Buffalo, or the Pratt Institute, or the Chas. Kosmisky school, it promises to be the most helpful and the most thoroughly educational and practical.

When pubescence has been established and the girl has become a woman, it is possible that she may be able to withstand the trials and the burdens of our medieval and pedantic educational system and take her place in the last years of the high school or the beginning of the college course side by side with the men. Women must become productive and independent members of society. She is not to be the ornament that the women of the Turkish household is, or the quiet drudge and housekeeper of the German family, and she ought not to be the dispenser of social affairs, or the insignia of the financial success of her husband or father, and the game of gynæcologists which the American woman of the upper class latterly has become. She should be, it seems to me, a healthy human being, taking her place in society and bearing her burdens and accomplishing her work as independently and as self-reliantly as men.

Less than one-third of the women of the country are brought up in cities. The surroundings of the country girl are quite different from those of the city girl, and yet they are much influenced by the customs and habits of the great aggregations of people from whom civilization takes its name and inspirations. The country girls are trained as nearly as possible as the city girls are. They are taught to read and write, spell and figure, write compositions, and read

French and Latin, and despise all sorts of domestic or manual labor. They dress as their sisters in the cities do, begirt with corsets and restrained by long skirts and flounces. Only because of the necessity of household duties and the proximity of the educational influences of the horses, the cattle, the barnyards, and the fields do they secure that moderate advantage in education which makes the country women superior to the city bred in point of health and life and productivity.

The ideal life of the child is one in which she comes in contact from necessity and pleasure with all the things which go to make up the physical necessities and comforts of the common life. Object-lessons upon the bean, the pea, the potato, the cabbage, the butterfly, the miller, the earthworm, and the rabbit are far less educational than a single season in gardening for use—for actual food.

The need of physical training and medical supervision of the girls and boys at this period is especially imperative. The quarterly anthropometric measurements, with quarterly medical supervision, should be used as a basis for the diagnosis of the next quarter's exercises and studies. The school curriculum must correspond to the needs of the child, the physical exercises must be dictated by his or her immediate needs, the home life and even the habitat of the child must be left to chance, but must be made to conform to the imperative needs of the child's growth. Such changes must be made as will reconcile the school to the child, if the State demands all to support an education for all the children.

HOW TO RECONCILE MODERN EDUCATIONAL METHODS WITH THE DEMANDS OF HEALTH.*

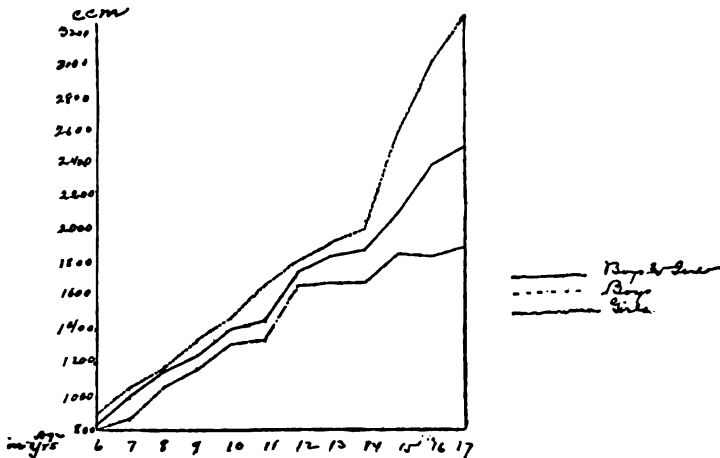
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There are one or two observations that have been made in measuring and testing school children of Illinois during my connection with the State University up to and including last summer. The first class of facts are the physical facts and are indicated in the chart I first present, with the results of experiments with reference to the lung capacity in boys and girls respectively. The figures on the left indicate the number of c. c., representing each one of these stages, of height. The dotted line represents the lung capacity in a boy; the lower black line the growth of lung capacity in a girl at the age of six, the girl having 800 c. c. of lung capacity, the boy 900. They run parallel in their development until about the age of thirteen. The boy, at the age of thirteen, makes a remarkable lunge of growth in lung capacity, doubling that at six, and this continues up to the time he reaches the age of seventeen; while the girl's lung capacity has increased but little, due to the two facts referred to by Dr. Holmes, namely, repression as respects exercise, and also compression as respects dress. This would not be so significant a fact were it not for the other fact, that this growth of lung capacity indicates to a large degree the amount of vitality the child possesses. The force that should have been expended in growth of lung capacity has been expended in some other way, according to the lines of Dr. Christopher's address. We have found in our observations a well-established periodicity of growth. In our actual observations and tests and measurements of about 35,000 school children we have found that it is necessary in order to develop the muscles to exercise them at the time of most rapid growth. We find this to be equally true with reference to any of the physical organs. We find it particularly true with reference to the mental faculty. We take memory at the time of its most rapid growth, also judgment, reason, comparison, and so on, and made observations on these points. And so we are seeking to readjust our

* Read before the Chicago Gynæcological Society, April 15, 1898.

school curricula on the basis of growth, instead of having cast-iron school environment. We are seeking to readjust the courses of study, to fit the child both as regards physical, and also as regards the mental, facts. We have arranged physical exercises in the schools to correspond to the different periods of growth, each set of exercises being adapted to that particular stage of development for which it is provided. All of you know that there is a time in early life, from the ages of six to nine, when calisthenics are beneficial. You know that there is another period when ordinary calisthenic exercises are not only of questionable value, are non-efficient, but that there are times when they are absolutely harmful; while again, at the age of 45 to 55, they once more become beneficial. At a cer-



EXPLANATION OF CHART SHOWING GROWTH OF LUNG CAPACITY.

Boys have larger lung capacity than girls throughout the entire period of growth; at six the girls have a lung capacity of 810 c.c. and boys of 905 c.c. There is relatively little increase in this difference up to and including the age of twelve. Almost no growth occurs in the girl between the age of twelve and fourteen, and likewise from fifteen to seventeen. Note the difference in the case of the boys.

tain period games calling for endurance in the way of contests develop the muscular system, but at other periods these exercises are extremely harmful. The games that are carried on in the athletic field by college students are of great advantage in developing the muscular system; but the high-school boy cannot follow these games because they call forth too much endurance. If he under-

takes to do what the college student does, he does it to his own harm. In our exercises we have a demonstration of growth periods, and there is no period which is so critical, none that requires so much close observation as the period of pubescence in both the boy and the girl. We have here a chart, drawn rapidly, for the purpose of representing the physical exercises that are most beneficial at different ages, and the periods of development are divided into six to nine, nine to fourteen, fourteen to twenty, twenty to thirty, etc. We have here the periods given for the exercise required by certain sets or groups of muscles, whose functions call for that particular exercise in order that growth may be accelerated, or that it may undergo its proper course and attain its proper state. You will notice that we have forbidden certain exercises. At the age of eight and a half years, rope jumping is especially harmful, because the heart valves are enlarging at that time. At this period canalization of the heart takes place. We give the form of exercise permitted. The heavy lines indicate the proportionate amount of exercise that is needed at each of these periods. The chart is self-explanatory. I will refer now to one or two notes bearing upon that proposition. The nature of the exercises at the period of from nine to fourteen, the purposes for which they are needed, may be classed under three heads: First, exercises that bring about incitement of growth and the formation of blood. Secondly, those exercises that satisfy the need of acquiring a graceful carriage and a nice walk; that is, the muscles of co-ordination pass through a particular phase of their development, and the perfecting of the co-ordination of muscles cannot take place so advantageously at any other period, and those exercises which conduce to grace of body and ease of posture must be given to the child at this stage of his or her career, if they are to reap any considerable advantage from them. Thirdly, we must have at this period, if we ever have them at all, the exercises that conduce to practice and skill. The forbidden exercises at this period are those that conduce to straining of the muscles. They must be avoided because of impending molecular changes. Exercises of endurance must not be continued to the point of exhaustion; they must be stopped when fatigue manifests itself. That is the reason we have come to the conclusion from observation that long-continued piano-practising on the part of the girl at this stage is just as injurious as running a sewing-machine, if carried beyond the point of endurance or of fatigue. As to fatigue poisons, we all know that these are car-

ried into the system at this age more easily than at any other period of the girl's or boy's career. The nature of this poison has recently been worked out by Wedensky, Mosso and Maggiori, Russian and Italian chemists. The poisons of fatigue are precipitated more readily and rapidly at the age of eleven to thirteen in the girl and from twelve to fourteen in the boy. Any form of exercise at this period, whether it be piano-playing or anything else, carried to the point of exhaustion or beyond the point of ordinary capacity for endurance, will result deleteriously. We find, too, that this period is one of rapid growth. In the specific case, adduced this evening by Dr. Christopher, of rapid growth, the weight of the boy in a single year increased some seventeen pounds. We must remember that this is not at all unusual, for the average Illinois boy at the age of fourteen to fifteen increase materially in weight; as the result of measurement of 21,000 school children, the average Illinois boy is found to increase in weight from the age of fourteen to fifteen, 18.3 pounds. All of this new tissue which is forming must be taken care of relatively by the same amount of blood supplied, and consequently, we have brain fag. At this period we find that the blood-supply is diminished: it affects the brain, first of all. That is the reason why the boy at this period of his career is unable to attend to detail in mastering or learning small facts or things connected with his lessons. He cannot learn the details and facts as the girl does who has passed through the most critical period of her career. So we find at the age of fourteen that the girl, who has passed the critical stage of her career, has a perfect mania for detail.

I am not quite so sure that it is necessary to have separate education of the sexes at this critical stage of their career; yet I think we should insist upon a little more individualism in our education rather than the class system, and insist upon the teacher taking into consideration the individual peculiarities, or at least the sex peculiarities at this stage of the child's career. But it seems that the method or form of education cuts a much wider swath, plays a more significant rôle than does the mere accident of whether the child is in a school that is exclusively for boys or for girls. The instance cited by one of the doctors this evening, of the boy who accomplished so much at a manual training-school, I do not think was due to the fact that he was separated from the girls, but doubtless to the fact that it was a manual training-school, while at his former school he was nagged by the teachers in

regard to details in his lessons, such as names in literature, classification of phrases, parsing, etc. It is the character of the subject with which he has to do. If we make the course of study to fit the child according to the stages and periods of his development we shall have reached the solution of the problem more successfully and in a more final way than we could otherwise obtain. To illustrate from personal observation. Six years ago, while visiting and inspecting the school systems in Europe, I happened to be in Paris and became acquainted with four teachers in the Lyceé, the school for boys. The course of study is seven years. To each of the teachers is given twenty-five boys. These four young men had gone some years previously to the Minister of Education and asked for the privilege of taking their one hundred boys through the course of studies prescribed by the state, but in a different order, which they thought corresponded with the child's period of development. What was the result? At the end of three and a half years they passed through all of these studies with a great degree of credit, when, as prescribed by law, if they had followed the order, it would have occupied seven years. The Minister of Education became suspicious of the results, called in physicians to examine the children as to their physical development. The one hundred boys were examined with reference to their mental attainments and found to be, equal to, if not above, the average. If we make mental demands upon the child according to the natural law of development, as we understand it now, knowing the children grow in the same order, we know what studies to give children, at any stage or period in their development. We would not have arithmetic beginning at six, and continuing through every year of the elementary, and then having a review in arithmetic in the high-school grades, but we would do as we know can be done and has been done successfully in a hundred towns and districts in Illinois the past year—we would place arithmetic at the age of seven and a half to ten, then as teachers and parents we will have learned the law of mental waste and mental economy. If we find that it now takes seven years for the pursuit of a subject, when we can teach that subject and do so more successfully in two and a half years, as in the case of arithmetic, we certainly save a large amount of time for the introduction of those studies that make the child better prepared for life. If we consider also the fact that the stress will not be so great and the demands will not be so incessant and severe, if we take advantage of the laws of mental waste and mental economy, we will in that way have solved the most

perplexing problems that have to do with this as well as other periods of the child's growth and development.

What I have said applies equally well to both sexes. I think that the rapidly growing or over-grown boy at the age of thirteen demands as much, if not a larger amount of sympathy, than the rapidly growing girl at the age of eleven or twelve. These problems are general as applied to both sexes. But we must remember that the modern methods of education must be re-adjusted to fit the children rather than that the school board or school superintendent, apart from knowledge of children and their ability should map out a courses of study and seek to make each child fit a course of study, rather than make the course of study fit the child. Courses of study should not be so cast-iron. They should not be the fiat of some educational legislature, some school board, some state organization of teachers, adopted by them with a view to making the children fit them.

We have been taking the child out of his natural lines of growth and development, and we have not only been doing that, but we are withdrawing those impulses of growth and those forces that lead to growth and full fruition of life and power. When we see a child enter school in the bloom of youth, and then because of improper methods of education as he continues at school becoming more and more depleted, less and less energetic, the signs of health no longer present, and perhaps at last the child breaks down before he has finished his school course, can you wonder that parents sometimes hesitate to send their children to the modern school? It is, I think, because we have not presented to the teachers and school officers a clear idea or notion of what growth really is with reference to both its physical and mental side. But we must admit, that teachers over the state are becoming more and more aware of the important fact that education must not be acquired at the expense of health, and parents, as they have become enlightened more and more by the discussions of medical men in our teachers' gatherings, realize the importance of greater physical development during pubescence. Dr. Holmes and Dr. Christopher have appeared time and again before the teachers of the state and addressed them regarding certain phases of this subject, and as a result, the teachers have become convinced that not a single bit of education should be gained at the expense of health, for what will it profit a child if he should gain the whole world of knowledge and lose his own health.

CLINICAL PHENOMENA RELATING TO THE NERVOUS
SYSTEM IN CONNECTION WITH DISEASE OF THE
FEMALE GENERATIVE ORGANS.*

BY A. F. CURRIER, M.D., NEW YORK.

It is with a sense of diffidence and more or less of a consciousness of temerity that I reopen a subject which has been illuminated by the contributions of some of the most distinguished members of the Philadelphia profession.

A review of the voluminous literature of this and collateral subjects could not fail to impress one with the weight which is attached, both at home and abroad, to the opinions and conclusions upon this subject of Weir Mitchell, Goodell, Baldy, and others of your colleagues, and perhaps arouse the thought that the theme is well-nigh exhausted. If the latter is true I beg but to be allowed "a Parthian shot."

So richly has the field been worked that its investigation has caused an occasional feeling of the weariness which Buckle experienced in reading the many volumes of sermons by Scotch theologians while preparing his history of "English Civilization." Matthews Duncan experienced a similar weariness so long ago as 1879, when the subject was yet young, but he expressed a sentiment with which I can cordially agree, that the remainder, after the sifting, was of great value.

"The therapeutics of the diseases of women," says this acute observer, "is not founded on peculiar knowledge, it has no peculiar methods, no special mysteries. The specialty is in the physician, not in the disease, and every special physician ought studiously to oppose this inevitable tendency to err from the truth (referring to much of the literature relating to diseases of the uterus and ovaries)."[†]

In a recent contribution upon "Heredity as a Factor in Insanity," Dr. Henry P. Stearns, a distinguished alienist of many years' experience says: "All acquired characters and changes in the physiological activities of the system, whether physical or mental, are affected primarily and essentially through influences acting upon the nervous system.

*Read before the Philadelphia Obstetrical Society, April 7, 1898.

† *St. Bartholomew's Hospital Reports*, London, Vol. XV., No. 1, 1879.

“That portion of the sensory system of nerves, which has a distinct relation to the ovaries and their product is among the earliest in development and is related to the primary instincts and profoundest activities of the organism. Provision is therefore early made in embryonic life for the future conveyance of radiation of organic energy from the brain to influence them.”

Hering observes: “We notice further on that the development of germs which are destined to attain an independent existence exercises a powerful relation, both on the unconscious and conscious life of the organism and this is a hint that the organ of germination is in closer and more momentous relation to the other parts, especially to the nervous system, than any other organ. In an inverse ratio the conscious destinies of the whole organism, it is most probable, find a stronger echo in the germinal vesicles than elsewhere.”

Hence disease of the cells of the central nervous system must have a decided influence upon the organs and the products of their function which are under their influence in a normal state of activity.

If disease of the cortex arrests menstruation it must modify the infinitesimal elements of the germ plasm which are the representatives of the characters of the future organism.

This organic connection between cortex and ovaries is more intimate in some persons, families, and races than in others, hence difference in transmitted characteristics.*

It will be desirable to bear the foregoing statements clearly in mind in the development of the subject which is under consideration.

If it is probable that action between nerve-centers and the essential organs of generation by well-defined paths is so significant, is it not also probable that the converse is true of influences which proceed from organs of generation to nerve-centers.

I beg to call attention, next, to the relations which the nerve-supply of the generative organs bears to that of other portions of the body and would also apologize for introducing material which is somewhat elementary before an audience like this.

It is but brushing the cobwebs from memory's walls. The investigation of the anatomy of this portion of the nervous system has been a work of great difficulty and has linked to itself distinguished names, among which may be mentioned the two Hunters, Tiedemann, Robert Lee, Hirschfeld, and Frankenhäuser.

Robert Lee, who made repeated dissections of the gravid uterus

* *New York Medical Journal*, p. 885, December 25, 1897.

at different stages, when the nerves had undergone decided enlargement (though both the Hunters denied persistently that such enlargement ever occurred during pregnancy) has left an interesting memoir with plates showing the minutest details of its nerve-supply and that of the contiguous organs.*

The nerve-supply of these organs is as rich as that of any organs of the body. Why should it not be so when we consider the important functions of menstruation, coitus, pregnancy, and the menopause which are to be served by them?

This supply is entirely from the sympathetic system, but communication is established with the cerebrospinal system by communicating links between the sympathetic, lumbar, and sacral nerves, and the corresponding lumbar and sacral nerves of the cerebrospinal system. From the latter the path is direct to the motor center of the uterus in the medulla, and probably indirect to other portions of the brain.

The sympathetic center for the uterus is the aortic plexus. (Plexus uterinus magnus, Frankenhäuser), from which is derived the hypogastric. The latter divides and is distributed to the uterus, vagina, and bladder, and, by its connections, to the descending colon, sigmoid flexure, and rectum.

The center for the ovaries and tubes is the spermatic plexus which arises from the aortic and is connected with the renal. The renal communicates with the solar plexus and by the ramifications of the latter with the heart, lungs, and stomach, hence the important chain of influences which may be excited when the uterus or ovary is irritated, heart, stomach, kidneys, intestines, bladder, lungs, and brain being possible sharers in the response. It is this anatomical nexus which has given foundation for the observations concerning uterine and ovarian reflexes, and is doubtless the explanation of many of the curious phenomena which are associated with these various organs. The anatomical relationship being demonstrated the physiological and pathological consequences and coincidences become reasonable and intelligible, and I am quite prepared to agree with Calkins, who states in an interesting article on "Uterine and Ovarian Reflexes" (*Medical and Surgical Reporter*, Vol. LI., pp. 312, 340, 1884), that "local pathological changes are often wanting when great reflex disturbance exists."

It is willingly conceded, however, that a statement of this character should not be allowed too much latitude, and we should rather

* "Memoirs on the Ganglia and Nerves of the Uterus," London, 1849.

accustom ourselves to the discovery of material lesions in these organs when seeking to relieve disturbances which are referable to them or to the organs with which they are associated.

What are some of the effects of uterine and ovarian irritation—and for this purpose these organs may be regarded as one, since by virtue of their anastomoses they have essentially the same rich sympathetic nerve-supply?

In the alimentary tract the effect may be arrest of glandular secretion with gastric or intestinal dyspepsia, nausea, and vomiting, and countless familiar symptoms which are associated with such disturbance.

In the heart the effect may be an increase in the rate (tachycardia) as well as in the degree of its contractility, the valves may become incompetent, and there may result in consequence, a modification of the entire circulation.

In the lungs, larynx, and pharynx the irritation may give rise to an annoying cough, to dyspnea, and other phenomena of asthma.

In the kidneys there may be a partial arrest of the urinary secretion, or if paralysis of the vessels of the kidneys has followed irritation there may be an abundant discharge of pale urine of a very low specific gravity.

In the rectum and sigmoid flexure there may be arrest of secretion with constipation or, on the other hand, an annoying diarrhea.

In the bladder constant irritation may be present with persistent inclination to micturition.

In a similar manner the eyes, the skin, the brain, and other organs and tissues less frequently, may show by their disturbed condition their sympathy with a disordered condition of the organs of generation.

Whether one form of irritation in the uterus or ovaries produces these varied consequences in other parts, the local conditions in the uterus and ovaries differing with the disease which affects them, or whether there are different forms modified by local conditions, I do not know and am not aware that any one has as yet found out, but the fact of the interaction and intercommunication of the different organs has been observed so frequently and by so many observers of experience and matured intelligence that its trustworthiness ought to be accepted.

It may be said—the phenomena which have been referred to are those of hysteria, and no doubt, such a diagnosis would be correct in many cases, but on the other hand, these phenomena may present

when no lesion of the uterus or ovaries is apparent, and again very marked lesions of the uterus and ovaries may be quite unattended by them.

Some of the determinable conditions relating to the uterus and ovaries which coexist with disturbance in more or less remote organs are neoplasms, which apparently act by their pressure and their interference with nutrition, undeveloped organs with their faulty arrangement for the performance of function, displacements with the disturbance of circulation and nutrition which sometimes, but not always, results; inflammatory deposits and conditions with their septic influences and their palpable local effects in addition to their reflex or remote influences.

These correlations are doubted by many and are attributed to the overwrought enthusiasm of gynæcologists.

The patients are frequently sensitive, hysterical, and foolish. The only course for the gynæcologist to follow is to remove or otherwise use remedial measures to organs and tissues which are diseased; if troubles in other organs are not also relieved, he has at least removed a palpable cause of mischief. A hysterical woman, after a surgical operation, remains a hysterical woman, the seat of her disposition not being in her genital organs, though it is probable that the removal of those organs from young or middle-aged women has a more decided effect upon the disposition than their removal from those who have passed the menopause.

Other influences which may be contributory to the lesions of the genital organs in producing the conditions which are under consideration are the alcohol habit or any kindred vice, inherited tendency to disease of various kinds, unusual experiences—such as accidents, great calamities, overpowering emotions, also a weak and unstable disposition, etc.

To what degree the diseased condition is due to the genital organs, and to what degree to the contributory influence is not always easy to determine and hence the radically different means of treatment by those who work along different lines of practice.

Success in treatment will be governed by various factors including the submissiveness of the patient, and the force of will, the judgment, and the skill of the physician, but it may be affirmed without hesitation that whatever the disposition of the patient may be, a positive anatomical lesion cannot be charmed away by any suggestion nor can the conditions which depend upon that lesion.

That the primary lesions and the disturbances which result from

them are susceptible of various modes of treatment is amply shown by the variety of methods which have been in vogue from year to year as our pathological and therapeutical views have shifted from one point of view to another.

A generation and more ago uterine pathology was simple and its chief apparent lesion was ulceration of the os uteri. The treatment was equally simple and consisted in the liberal local use of the pure nitrate of silver. It is not to be supposed that the results of this treatment were uniformly bad or it would not have been so long persisted in. A logical step from the bad results of this method was the splitting open of the cervix so earnestly advocated by Simpson and Sims, and from the extravagances of this method again the sewing up of the cervix with its collateral operations. Incidental to this period was also the pessary period, when human ingenuity was taxed on the one hand to find a deviation of the long-suffering uterus from its correct inclination, and on the other, to invent an instrument or machine, of varying degrees of utility, to bolster it up.

Too often the pessary has been adjusted by unskilful hands when its only effect has been a bad one. Too often the operation has been done for so-called laceration of the cervix and perineum when Nature could not be blamed for lesions which she had not created.

Finally came the abdominal-section period with the removal of countless ovaries and tubes and the unbecoming strife on the part of many men to make numerical records by means of the trophies which were thus obtained. Like the mother of the Gracchi in their annual reports, labeled "my year's work in laparotomy," they proclaimed to the world "these are my jewels." Do not think that these remarks have ridicule for their aim and intention. They are made rather with a feeling of deep regret that cause and effect are apparently not weighed in all cases with that judicial sternness which should be exercised before important organs are removed from the body.

From these multifarious operations, good and bad, many cures have resulted, sometimes temporary, sometimes permanent. It is well to remember that while successes are generally recorded, failures are by most men, preferably wrapped in the veil of silence.*

* Angelucci and Pieraccini (*Rivista sperimentale*, June, 1897) obtained reports from asylums and psychiatric clinics of 115 cases in which operations had been performed upon women to combat some nervous disorder or remove diseased genital organs. In this number there were 6 simulated operations for hys-

It is fair to believe that as the result of the experience of the past fewer unnecessary operations are being performed than formerly. This is certainly true with those who have acquired the power of discrimination and self-restraint by some years of experience.

There is still occasion for the abandonment of much that is superfluous in the treatment of the diseases which are peculiar to women, and for the practice of a real conservative surgery, a cardinal principle of which has always seemed to me to be that no organ or tissue which can properly be saved, either wholly or in part, should be sacrificed. The field of useful work will remain a broad one when these unnecessary and undesirable elements shall have been eliminated.

The deleterious influence of surgical operations upon the nervous system is by no means the consequence of operations upon the genital organs alone; literature abounds with illustrations of such a consequence after operations of all kinds and degrees. Traumatic insanity is a condition which has long been familiar to surgeons in every avenue of surgical practice and neuroses have often been ob-

terical conditions, in 65, healthy organs were removed to cure nervous disease; in 18, diseased organs were removed from nervous women; in 26, diseased organs were removed from women who were neither insane nor hysterical; in 41, healthy organs were removed from women who were hysterical. Of the latter series 17 became insane, 10 became more hysterical, 11 were unaffected, 3 were cured.

From 18 other hysterical women diseased organs were removed, 3 of them becoming insane, 6 unaffected, 9 cured.

From 24 who were neither hysterical nor insane, diseased organs were removed, insanity resulting; 2 others became neuropathic.

From 24 insane women the healthy organs were removed, 19 becoming worse in consequence, and 5 cured.

Schauta, *Wien. Med. Blätter*, Vol. IX., pp. 601, 633, 1886. "Narration of Cases of Pelvic Disease Cured by Local Applications, Pessaries, and Discission of the Cervix."

Chrobak, *Wien. Med. Presse*, 8, 1869. "Narration of Cases of Retroflexion with Neuroses of Respiration, Cured by the use of Pessaries."

Kinsman, *Obstetrical Gazette*, Cincinnati, Vol. I., p. 195, 1878. "Metritis with Neuralgia Cured by Vaginal Applications."

Little, *Medical Times*, Philadelphia, Vol. XI., p. 581, 1880. "Various Disorders of the Eyes, Apparently Dependent upon Uterine Disease, Relieved When the Latter Was Cured."

Wylie, *Medical Record*, August 4, 1894. "Narration of Three Cases of Melancholia Dependent upon Uterine Disease and Cured by the Relief of the Latter."

A case of pronounced asthenopia in a lady of seventy-one, was relieved after the removal of the prolapsed uterus by the writer. The uterus was not removed on account of the eye trouble which was supposed to be an incident of old age. The testimony as to relief was unsolicited.

served which gave no evidence of their presence prior to operation, or, being present, were intensified after operation.*

Some writers have affirmed that neuroses and psychoses following operations upon the eyes exceeded all others in frequency.†

The neuroses and psychoses which follow the simple administration of an anesthetic have led Savage to remark that "any cause producing delirium may produce a more permanent disorder of the mind."‡

In view of the intimate relationship between the nerve-supply of the uterus and ovaries on the one hand, and the viscera and central nervous system on the other, there is no occasion for surprise that traumatisms of the former should be followed by undesirable consequences in the latter, and their degree is not necessarily measured by the magnitude of the traumatism.§

Aside from this nerve connection there are also other *predisposing* factors which must be taken into account, the sensitiveness of temperament in women, heredity, anemia from losses of blood from constipation, or from impoverished nutrition, influence of poisons of various kinds (iodoform, carbolic acid, septic intoxication), diminished resisting power on account of the alcohol or other drug vice,

*Clevenger, *Alienist and Neurologist*, p. 449, July, 1888. "Traumatic Insanity and Other Effects of Head Injuries."

Cowen, *Journal of Mental Science*, London, Vol. XLII., p. 122, 1896. "Types of Traumatic Insanity, (after Head Injuries)."

Barwell, *Lancet*, Vol. I., p. 522, March 21, 1885. "Insanity After Ovariectomy, (or as a Sequence of Any Major Operation)."

Sears, *Boston Medical and Surgical Journal*, Vol. CXXVIII., p. 642, June 29, 1893. "Insanity Following Surgical Operations." (Insanity may follow the most trivial operations as well as the most serious, but it occurs more frequently after gynæcological and cataract operations than after others.)

†Simpson, *Journal of Mental Science*, London, Vol. XLIII., p. 86, 1897. Schnabell is quoted as observing post-operative insanity twelve times in 186 eye operations.

Martin, *Mémoire et bulletin Société de médecine et chirurgie de Bordeaux*, p. 188, 1895. "Insanity after Operations for Cataract."

Sousa-Refoios, *Revista de medicina e cirurgia*, Lisbon, Vol. I., p. 33, 1894. "Insanity after Operations for Cataract."

Hochwart, *British Medical Journal*, L., Vol. XC., p. 1509. "Psychical disorders are more frequent after eye operations than others because of (1) nerve tracts which connect the eye and the brain, (2) irritated sensory organs which often cause insanity, (3) predisposition (in cataract) from previous condition of blindness, (4) advanced age of cataract patients.

‡ *British Medical Journal*, Vol. II., p. 507, 1887.

§ See appendix for cases illustrating this statement.

the sudden suppression of an important function, weakness from old age or from the wasting effects of disease.

It is somewhat remarkable that these consequences are not more frequent, more severe, and more persistent, when we consider the possible number and variety of complicating conditions. The explanation may be that nerve communications are cut off in some cases and a healthier condition of nutrition is established in others along the nerve tracts.

In general, in any case of disease of the female genital organs in which disorder in related parts fails to appear, or having been present disappears after treatment or operation, we may conclude that some change of a reparative character has taken place along the path by which nerve impulses are conducted from one of these stations to the other.

Of all the possible ulterior consequences of the operations to which these organs are subjected there are two which are especially noteworthy, pain and disturbance of the mental equilibrium. Few operations are unattended by pain as a sequel. True, neither its intensity nor its duration may be great, and the congestion which is chiefly responsible for its presence may quickly subside if the conditions during and after the operation have not been improper or unfavorable. But there is still much to be learned in respect to the pain which so often persists long after the patient has recovered from the immediate effects of the operation.

For this symptom the surgeon is often responsible, assuming that his operation was one which was demanded and that it removed the lesion for the removal of which his assistance was sought. If in any given case the intestines become more closely adherent than before the operation, if a hard mass of exudate fixes the contents of the pelvis, if a quantity of ligatures irritates the tissues which they inclose, and if an unsightly scar upon some portion of the skin excites unpleasant emotions whenever it is irritated, there is at least a suspicion that the surgical technic in the case has been faulty.

For my part I look forward to the day when few ligatures will be left in the abdomen, and none will be buried in the tissues, when a protecting covering of some innocuous material will replace destroyed peritoneum, and when the endermic suture or some modification of it will reduce the surface scar to the minimum. There are surgeons who have already wellnigh accomplished perfection in technic; when this devoutly to be wished consummation becomes more general there will be less pain.

I have used the phrase, disturbance of mental equilibrium, advisedly and deliberately concerning the sequels of gynæcological operations. Of this condition there are many illustrations, of insanity after operation there are relatively few. Tait's statement, based upon a personal experience in 7000 gynæcological operations, is that only seven cases of insanity resulted, the percentage being no greater than the ordinary percentage of insanity in the adult female population. (*British Medical Journal*, Vol. II., p. 497, 1889.)

Rohé ascertained by circular inquiry from the lunatic-asylum superintendents throughout this country that during the ten years from 1883 to 1893 there had been in all the institutions under their care only twenty-five cases of insanity which had followed operation upon the female genital organs. These were probably insanities of a more or less persistent form and were regarded by Rohé as that variety which has occasionally been observed in women who have not been subjected to operation and which was coincident with the occurrence of the menopause. Of the 25 cases, however, 7 recovered, 2 were discharged improved, 4 died, and 12 remained under treatment.* Of other reported cases in which insanity was permanent Vène reports 5;† Sears, 16;‡ Jones, 1;§ Werth, 2;|| Manton, 2.¶ Other cases of this character may have been reported, but have escaped my search.

Of all cases of insanity of this variety, whether curable or incurable, permanent or temporary, I have been able to find the record of only 355, and many of these have probably been reported twice in the tables of writers who have recorded cases in addition to their own.**

By far the largest proportion of this total number, viz.: 251, is

**New York Medical Journal*, Vol. LVIII., p. 437, 1893.

†*Paris thesis*, No. 220, 1891.

‡*Boston Medical and Surgical Journal*, Vol. CXXVIII., p. 642.

§*Lancet*, Vol. I., p. 639, 1885.

||*Verhandlungen der deutschen Gesellschaft für Gynäkologie*, Vol. II., p. 60, 1888.

¶*Annals of Gynecology and Pediatrics*, p. 714, September, 1897.

**The following table represents such cases of insanity after gynæcological operations as could be found in the records of the past twenty years.

Reporter.	Number of cases.	Result.
Angelucci and Pieraccini	44	not stated.
Thomas	26	"
Sears	57	"
Homans	2	"

given without specific details and many must be deducted on account of repetition. Of the individual cases which are narrated in detail and are usually to be relied upon almost all (80) ended in recovery, only 16 were fatal, and only 8 incurable.

While perfectly conscious that these records are inaccurate they are useful in showing that the result in the great majority of cases is recovery.

To go into further detail in this matter is principally to repeat what has already been said by others. It is therefore best to say it as summarily as possible. The transitory or curable cases include by far the great majority of the total number. The type has been referred to by Wood* as acute confusional insanity, though, of course, it is by no means unvarying.

Reporter.	Number of cases.	Result.
Lyons	2	cured.
Holmes	3	"
Sprague	1	death.
Jacobs	3	"
"	2	cured.
Simpson	1	"
Edinburgh Royal Infirmary	10	not stated.
Edis	1	cured.
Sears (private cases)	2	"
" " "	1	incurable.
Vène	5	"
"	11	death.
"	52	cured.
Davezac	1	"
Régis	1	"
Ill	2	"
A. Martin	2	not stated.
Werth	3	cured.
"	2	incurable.
"	1	death,
McKone	1	cured.
Lawrie	2	"
Segond	3	"
Barwell	1	"
Doran	1	"
Meredith	1	"
Butler-Smythe	1	"
Le Dentu	38	not stated,
Kiernan	65	"
Tait	7	"
Total	355	

* *University Medical Magazine*, Vol. II., p. 117, 1889.

To the gynæcologist unversed in neurological nomenclature the condition may be regarded as melancholia or mania, taking its characteristics according to the temperament and surroundings of the individual.

It is hardly fair to attribute to the effect of surgical operation those cases of insanity which develop months after the operation was performed, unless there is a gradual progression of the bad symptoms which culminates at length in definite mental alienation. From the half-dozen cases of post-operative insanity which I have seen and my deduction from the experience of others, I should classify it, with reference to its origin, as (1) the traumatic, (2) the toxic, (3) insanity with predisposition.

1. *The Traumatic.*—There are many women who bear any form of pain or shock badly, even a headache, or the pain of menstruation, or of childbirth unsettling the mental balance. It is not remarkable that the same effect should be produced by shock to the nervous system from the contemplation of a proposed operation, by the actual performance of it, and by the pain which may follow it. Especially does such a result seem intelligible when the uterus or ovaries are removed and the sensitive relations with the rest of the nervous system disturbed. This result has happened repeatedly after the performance of ovariectomy. (See appendix for illustrative cases.)

It may be manifest as soon as the unconsciousness of anesthesia is over or it may occur at any time within the ensuing week. If it happened at a later period it would not usually belong to this category. It usually ends in complete recovery, its duration varying from a few days to six months. Rarely it ends in death from suicide or other causes, more rarely still it becomes permanent.

2. *The Toxic.*—Insanity of this variety may have numerous causes, and in point of fact the operation may be the least efficient among them. Chemicals, especially iodoform and carbolic acid, have produced it, also ether and chloroform; while the poisonous products of decomposing secretions absorbed into the circulation are responsible for others. The organs of elimination in all cases of this variety are defective, though the fault is sometimes attributable to an excessive dose of the poison administered. The attack, like that of the traumatic variety, is usually within a week from the time of operation and manifests itself in the form of a noisy delirium which is the more annoying at night. The result will depend upon the quantity of poison absorbed and the resisting power of the patient. Such insanity is seldom permanent, the patient dying promptly from the

effect of the poison or recovering when it has been eliminated or exhausted.

3. *Insanity with Predisposition.*—The effect of the operation in this variety is superadded to a mental condition which is already trembling in the balance. Women who are decidedly hysterical, who are melancholy, who inherit a tendency to insanity, who are exhausted by excesses in alcohol, in venery, or in vice of any other character are its victims.

Such women are unfavorable subjects for operation. The mental disorder is slower in its determination than in the other varieties and it is more likely to be permanent. I know of complete recovery in one case and there are doubtless others, but the prognosis, as far as restoration to mental soundness is concerned, is distinctly worse than in either of the other varieties.

The conclusions which may be drawn from the foregoing statements are as follows:

1. The nerve connections between the uterus and ovaries on the one hand, and the viscera and central nervous system (cerebrospinal) on the other, are such as to warrant the belief in the abundant transmission of influences from the one to the other. As a corollary the removal of morbid conditions from the uterus and ovaries frequently results in the amelioration of disturbance in remote but related organs.

2. Surgical operations upon the female genital organs are sometimes followed by lesions of the nervous system, but not with much greater frequency than operations upon other structures. Their relative infrequency, especially when the uterus or ovaries are removed, demonstrates the wonderful accommodative power of the physical forces.

3. Insanity after operations of this character is of rare occurrence as a primary result of such operation and is usually transitory in its nature.

Appendix with Reference to Illustrative Cases of the Three Varieties of Post-operative Insanity.

I.

Sprague, *American Medico-Surgical Bulletin*, Vol. IX., p. 592, 1896. Mania eighth day after operation for lacerated cervix; death on the fifty-first day.

Jacobs, *Journal de Médecine de Paris*, Vol. VIII., p. 309, 1896.

Insanity in three days after curettage and colpoperineorrhaphy; slow but complete recovery.

Insanity one day after hysterectomy; slow but complete recovery.

Insanity one day after hysterectomy; cure in eight days.

Insanity in a hysterical woman the second day after ovariectomy; fatal.

Ill, *Pittsburgh Medical Review*, Vol. II., p. 1. Delirium, then melancholia ten days after abdominal section; cure.

Melancholia, eight days after abdominal section; cure.

Melancholia, one day after operation on the urethra.

Werth, *Münchener medicinische Wochenschrift*, p. 387, June 5, 1888. Six cases of insanity in three hundred hysterectomies and castrations. Two cases began eight days after operation. Two cases began after a few weeks. Two cases began after recovery from the operation. In 3 cases there was inherited disease. In 3 cases the menopause had been passed. One case recovered in 15 days; 1 case in 4 months; 1 case in 6 months. Two cases remained insane; 1 case ended in suicide.

McKone, *Medical Sentinel*, Portland, Ore., p. 330, August, 1894. Mania, fifth day after hysterectomy; recovery in six weeks.

Lawrie, *British Medical Journal*, Vol. I., p. 132, 1895. Insanity (two cases) after hysterectomy; recovery in three months. One of the patients was sixty-six years of age.

Discussion, London Clinical Society, *Lancet*, Vol. I., p. 522, March 21, 1885. Doran, Tait, Meredith, Edis all reported cases of insanity after ovariectomy lasting from ten days to two months.

Sears, *Boston Medical and Surgical Journal*, Vol. CXXVIII., p. 642, June 29, 1893. Ovaries removed for tubercular salpingitis of two-years' standing. Nervousness and hallucinations after six days. Permanent melancholia.

II.

Barwell, *Lancet*, Vol. I., p. 522, March 21, 1885. Ovariectomy; left ovary removed; carbolic-acid spray; hematuria and uterine hemorrhage three days. Insanity on the eighth day. Recovery after twenty-five days.

(This history shows that the insanity may have been due to carbolic-acid poisoning plus sepsis.)

Sears, *Boston Medical and Surgical Journal*, Vol. CXXVIII., p. 642. Operation for pelvic abscess, the healing process lasting seven weeks. Bad recovery from anesthesia; pseudo-epilepsy on

the sixth day; aphasia, deafness, somnolence, mental cloudiness. Mental symptoms relieved in five weeks.

Butler-Smythe, *British Journal of Mental Science*, p. 389, 1893. Ovariectomy; carbolic acid in urine; much sloughing; rupture of rectum thirteen days after operation; depression prior to operation. Mania on the fourteenth day lasting seven weeks; ultimate recovery.

III.

Lyons, *American Gynæcological and Obstetrical Journal*, September, 1897. Mania four months after operation for lacerated cervix; recovery after two months.

Melancholia two months after perineorrhaphy; recovery after six months.

Jacobs, *Journal de Médecine de Paris*, Vol. VIII., p. 309, 1896. Melancholia six months after hysterectomy; death in four weeks.

Melancholia three weeks after curettage for chronic endometritis, paresis, aphasia; death.

Davezac, *Journal de Médecine de Bordeaux*, October 15, 1893. Melancholia fifteen days after ovariectomy. Recovery in seventeen days.

Régis, *American Journal of Insanity*, January, 1894. Insanity six months after removal of the appendages. Improvement under the use of ovarian extract.

Sears, *Boston Medical and Surgical Journal*, Vol. CXXVIII., p. 642. Ovariectomy; depressing experience after recovery from operation; melancholia after two months; recovery after nine months.

Jones, *Lancet*, Vol. I., p. 629, 1885. Insanity three days after ovariectomy from joy at finding tumor removed; condition persistent.

VAGINAL INCISION AND DRAINAGE IN CERTAIN CASES
OF RUPTURED ECTOPIC GESTATION.

By WILLIAM D. HAGGARD, JR., M.D., NASHVILLE, TENN.

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Perhaps if at the outset I distinctly declare my belief that abdominal section is, generally speaking, the preferable operation for a large majority of cases of ectopic gestation, I can more easily define the class of cases to which vaginal section is applicable.

I will confine myself to the discussion of cases of ectopic gestation ruptured in the early months, and which clinically are the most frequent, pathologically are extraperitoneal by virtue of adhesions, and surgically are simplest treated by vaginal incision and drainage.

I realize that the knowledge of the murderous nature and successful treatment of this malady was obtained by abdominal section, and that its brilliant results mark one of the greatest epochs in surgery, and yet I believe the knowledge gained by these object-lesson operations has taught us that the type of cases I propose to discuss, which are walled off from the general cavity, are appropriate to the vaginal operation. Our lines of progress now are limited to the perfection of our surgical resources in the particular technic of a given procedure, and I repeat that without the acquaintance with this accident acquired by abdominal incision, we would be unprepared to select cases for the vaginal operation.

I fear I will not have your approval in the advocacy of this route, but in the class of cases designated, the repeated successes of many operators, and the increased confidence obtained from my own limited number of cases, give me the assurance to present the subject for your consideration. I hope the discussion evolved will tend to specify the cases to which it is applicable, and strengthen the growing interest in this method. Advances are only made by widening the scope of our art and specializing its limitations.

In the dramatic clinic-picture of a woman the subject of primary rupture of an ectopic pregnancy, the blanched, pulseless, clammy woman, with air-hunger, and the restlessness of impending death, is literally ebbing her life away in her own belly. And the acci-

dent, whose lack of treatment found no parallel in the history of human injury, has come to have but one treatment, that suggested by Harbert in 1849. I do not know of a surgical feat demanding more heroism than a life-saving emergency laparotomy for this perilous accident. The courage demanded is only exceeded by that required in encountering furious bleeding from a universally adherent placenta in the later stages. The triumph of surgery in this condition has in many instances negated Lusk's immortal phrase, "The resources of surgery are rarely successful when practised on the dying."

The necessity for abdominal section in this condition is unquestioned. Mann sums up the operative treatment of ectopic gestation as follows:

1. Before rupture, coeliotomy.
2. Soon after rupture, coeliotomy.
3. After rupture with hemorrhage, coeliotomy.
4. Encysted hematocele, early, coeliotomy; late, colpotomy.
5. Encysted hematocele, late or septic, colpotomy.

I desire to enlarge the recommendation for colpotomy to all cases of encysted hematocele. It is not my purpose to open up that apparently irreconcilable discussion about the existence of extraperitoneal hematocele. But from the accumulated testimony of many scores of observers I must declare my belief in this occurrence. And also that nearly all pelvic hematoceles have their origin in tubal pregnancy. It is to the pathological anatomy that I invite your attention.

Garrigues, in describing this phase, says:

"The blood is at first pure and thin, but becomes coagulated, inspissated, tarry, and still later, sometimes mixed with pus and sanies. Through adhesive peritonitis the intestinal knuckles are glued together and plastic lymph is poured out and converted into tissue, forming a roof over the extravasated blood, which in places is finger thick and shuts it off from the peritoneal cavity."

In discussing primary intraperitoneal rupture, Bland Sutton says:

"When the bleeding is not excessive the blood collects in the rectovaginal fossa, and floats up the coils of intestines. These, with the omentum, gradually form a covering to the fossa by adhering together so that the blood in the pelvis is isolated from the general peritoneal cavity."

Thus it will be seen that the geography of many hematoceles make them extraperitoneal, from an adventitious sac of inflamma-

tory exudate or from primary rupture into the folds of the broad ligament. The relative frequency of this occurrence compared to intraperitoneal hemocele has been estimated as one to three.

In the majority of cases the fetus dies, and when encysted with the other products it is applicable to the vaginal operation. Here, as in all surgical work, the selection of cases is the subtlest indication of skill and the surest element of success. In individualizing cases as to choice of route, the general requirements favorable to vaginal operations should enter, parous women with broad, roomy pelves being the most suitable, and in this particular condition the situation of the tumor low down is essential. As Henrotin plainly puts it, "If the tumor is low down go at it from below; if high up, from above." He also considers the route in unruptured cases according to their location. The vaginal operation is also advised by Hanks in unruptured cases, but not after rupture, he having had two uncontrollable hemorrhages by that route requiring consecutive abdominal section.

I think with the increasing number of reported cases of operation in unruptured tubal pregnancy, we should be more on the alert for it, and when recognized the simplicity of its removal by abdominal section is only exceeded by its blessedness.

Encysted intraperitoneal hemocele is differentiated from extraperitoneal hemocele or hematoma by the latter being usually smaller, unilateral to the uterus, pushing it over to the opposite side of the pelvis, and unaccompanied by signs of intraperitoneal inflammation. The tumor reaches much lower down and is more closely attached to the uterus, simulating intraligamentary cysts. This attempted differentiation is only a pedantic refinement that is impractical and immaterial. The treatment of both is identical.

The fact that very few hemoceles undergoing suppuration ever bleed when evacuated, lead us to inquire if they may not be opened prior to suppuration with equal immunity from hemorrhage. The vessels are usually filled with firm thrombi, and the evacuation of such a sac is very simple.

When the hemocele has undergone suppuration its evacuation *per vaginam* becomes imperative. To all intents it practically becomes a pelvic abscess, and I think the recent triumphs of vaginal section for this condition has placed its *rationale* upon a sound and enduring basis. It has been computed that the mortality attending suppurating hemoceles treated suprapubically is between 20 and 30 per cent., and the death-rate of the lower operation, with the ad-

vantages of rapid execution, absence of shock, abeyance of threatening sepsis, is practically *nil*. Adequate preparation for every contingency is a real but silent factor in the uniform success of latter-day surgery. The resourceful man is the one who has carefully thought out and provided for any emergency. It is largely a matter of prearrangement and not of intrepid genius that enables the surgeon to meet the unexpected with equanimity and ease. I have long been in the habit of preparing the abdomen and the requisites for its section, when undertaking vaginal operations, with the same routine that I have a transfusion cannula sterilized with the instruments in other operations of magnitude.

This forethought is not in the nature of a confessed weakness of the vaginal operation, but the recognition of an inherent danger that should be provided against.

Case III. in my series is an illustration of the necessity of opening the abdomen after the vaginal incision. If the abdomen has to be opened subsequent to the vagina, nothing will have been lost in the attempt to do the operation by the safest method, without sacrifice of any structure, and without subjecting the woman to a serious abdominal operation. It has been contended that the damaged tube is left, but if a woman becomes well, remains well for several years and has another baby, her cure would seem to be complete enough. This is the history of a case in my knowledge. Kelly's twelve cases all remained well.

The diagnosis will be confirmed. The clots can be removed with greater facility, and will favor the completion of the work of securing any bleeding points abdominally. The safest drainage avenue will be established, and if as Bland Sutton says, "Where blood has remained in the peritoneal cavity for several weeks after rupture it is invariably necessary to drain," it is much easier to make the vaginal opening from below than to open Douglas' space through the abdomen by cutting down on the finger in the vagina or thrusting a pair of scissors or a puncture machine through the vaginal vault. Boveé attributes a death after an operation for an intraligamentary pregnancy to inadequate glass-drainage that he thinks would have been saved by vaginal drainage.

Many cases have been reported by foreign operators: Herman's classical collection of 33 cases; Martin, 58; Masseti in Italy reported a large series in 1891. Many operations have been done by Dührssen, Schroeder, Pean, Elisher, Schauta, and Kossman.

Kelly and Watkins in this country have reported 13 and 8 re-

spectively, Noble 2 (suppurating), Frankenthal, Reynolds, Hanks (4), Mann, Beckett, Newman, Bovée, and many others.

I beg to add the history of two cases of my own, and a third to illustrate the necessity for sometimes having to open the abdomen secondarily:

Mrs. Annie G., white, aged 30, III-para, the youngest 2 years old; uneventful labors; 10-day puerperia. Menstruation began at 13, recurred regularly with 28-day intervals. Reappeared after lactational amenorrhea of over a year in August, 1896. In November, 1896, she flowed for three weeks at a monthly period, attended with bearing-down pains, which lasted half an hour at intervals during several days, sometimes confining her to bed. It was presumably a miscarriage. The lower abdomen was tender and enlarged, and the patient supposed she had a tumor. Examination by my father, Dr. W. D. Haggard, disclosed no abnormality. Menstruation continued regularly until April 23, 1897. Then it was absent for six weeks, or until June 3rd, when she was seized with a sudden, sharp pain while stooping over cutting out a garment. It caused her to lie down for a while, after which she resumed her work. Two days afterward the flow began, and continued intermittently until operation, June 30th. June 19th she took her bed. I saw her first June 26th. She had a dozen or more "cramping spells since the first one, three weeks before. Her temperature was 99.3° F and pulse 98. The retro-uterine pouch was filled with a tense, round, bulging mass. The uterus could be made out forward and was movable. The mass appeared as large as a cocoanut. She came to my infirmary June 29th, and was operated on the next day. Diagnosis: Ruptured ectopic gestation. It almost seemed begging for exit. The uterus was curetted and the cul-de-sac opened. Over a pint of blood-clot was scooped out. With hand in the vagina and the fingers in the sac I could map out its relations perfectly. The sac was felt as a distinct roof over the blood-clot. A finger inadvertently made a little aperture in the sac wall. The ruptured tube could not be isolated without breaking through the adhesions, and it was deemed best to leave them undisturbed. There was no free bleeding. The cavity was packed, and the patient evinced no more disturbance than if she had had an abortion. The sac closed rapidly, and she sat up on the tenth day, and was discharged in two weeks. Seven weeks after the operation she reported herself perfectly well, and weighed several pounds more than before she was taken sick.

Martha C., colored, aged 36, II-para, youngest 11 years old. In first labor, which was instrumental, she sustained lacerations of cervix and vaginal walls. No miscarriages. She was in bed three months with "inflammation of the womb" ten years ago. Menstruation, which began at the age of 12, was of the monthly type, of normal duration, and regular until May, 1897, when she skipped a period. In June she flowed continuously for a month, attended with cramp-like, colicky pains, and felt giddy. Flow stopped in July to recur August 14th, and continued until the time of operation, August 21, 1897. She had been confined to bed for a week under the care of Dr. O'Mohundro. She was having spasmodic, labor-like pains the while, with great rectal tenesmus, and difficulty of urination requiring catheterization. Temperature, 101° to 102°F. Pulse, 80-90. I first saw her with her physician, August 20th. The abdomen was enlarged, tympanitic, and very tender in the left lower quadrant. She was having a constant bloody vaginal discharge. A large, tender, globular mass filled the entire pelvis, fixing the uterus very far forward on the symphysis and extending in, a round end between the rectum and vagina, to within an inch of the outlet. On the abdomen the mass could be discovered extending midway to the umbilicus. Diagnosis: Pelvic hematocoele from ruptured ectopic gestation, probably undergoing suppuration. On August 21st the uterus was curetted and packed with gauze before making vaginal incision into the most prominent part of the presenting tumor. The section was purposely made lower down on the vaginal wall than usual to drain the distended rectovaginal pouch. Quantities of ill-smelling pus poured out of the opening, and the fingers introduced into the sac brought away large clots, some organized, and others in the process of disorganization. Over three pints of pus and clotted blood were turned out. Copious irrigation of the sac cavity with bichlorid was practised, followed by 1/2 Vol. H₂ O₂. The sac was packed loosely with iodoform gauze, and the vagina filled with the same material. She had no shock; urinated voluntarily. The vaginal gauze was removed on the third day, and part of the sac packing was drawn down after irrigating to facilitate its removal. The remainder was taken out on the fifth day, and the sac cavity irrigated each second day afterward, and a small strip of gauze placed in the vaginal opening, which remained patent until the cavity was obliterated, which occurred at the end of the fourth week.

Case III.—Mrs. W., Jewess, aged 22. No children or miscarriages. No accurate previous menstrual history obtainable. On the

night of November 21, 1896, she was seized with severe pain in the lower left abdominal region, and fainted in her husband's clothing store. She was carried to her rooms upstairs, and I saw her half an hour later with my father. She was blanched, and covered with cold, clammy sweat. Pulse, 68, and feeble. She was semi-conscious and gasping. There was a soft mass to the left of the uterus. Her condition was apparent to us both, and we had the sterilizers lighted while she was being conveyed to the infirmary in an ambulance. She was prepared at once for operation. The posterior fornix was opened, and following a number of clots came a smart hemorrhage. The opening was packed temporarily, the patient immediately reversed, and the abdomen opened. Evidences of recent bleeding were found, and it became furious when the tube was pulled up and until it was clamped and tied. A portion of the larger clots were removed and gauze drainage quickly passed through the opened cul-de-sac and the abdomen closed. The gauze packing was pulled out on the second day and a satisfactory recovery ensued. A slight stitch-hole abscess may have been the result of hasty preparation.

[ADDENDA.—Two additional cases have been operated upon since this paper was prepared, and as one illustrates the ease and the simplicity of the vaginal route in typically appropriate cases, and the other the necessity for abdominal section, either primarily or secondary to vaginal incision, in a large number of cases, they are incorporated herein.]

Case IV.—Mrs. R., aged 30, mother of one child 12 years of age; no pregnancies since. Menstruated normally until August 21, 1897, from which time she flowed daily until the time of the operation, December 9th. About six weeks prior to that time she was curetted by another physician for a supposed abortion, but finding a mass on one side of the uterus, and hemorrhage continuing, he entertained the suspicion of ectopic gestation. November 27th she was confined to bed with considerable abdominal pain, attended with rise of temperature and increased pulse-rate. There was no history of sudden pain and syncope—indicative of rupture—but the beginning of this serious illness and confinement to bed, it will be seen, was about the third month, probably the most frequent time of rupture. She came under the care of Dr. Epler, with whom I saw her on December 8th. She was a rather frail woman and markedly anemic. After recital of these symptoms, a vaginal examination revealed a softened and enlarged cervix, the fundus forward, and a considerable tense, hard mass, as large as a seedless orange, on the left side, and

extending somewhat behind the uterus. Manipulation was painful, but not of that exquisite type indicative of suppurative processes. But with a temperature ranging between 100° and 101° , and a pulse of 120, the possibility of suppurative diseases was borne in mind. The absence of the usual causes of pelvic inflammation and the history of temperature and profuse hemorrhage, unchecked by curettage, and associated with mass to one side of the uterus, inclined our diagnosis to ectopic gestation with rupture.

Operation was undertaken the next day. For the reasons set forth herein, on account of the location of the tumor and the possibility of pelvic suppuration, the vaginal operation was attempted.

The uterus was curetted, and an appreciable quantity of deciduous membrane removed. Post-cervical, transverse-vaginal section revealed the bottom of the tumor so resistant that the finger could not find entrance into the cavity. A scissors, guided on the finger, was thrust into the mass, and when withdrawn, a quantity of tarry, tell-tale blood welled forth. A mass of organized clots were scraped out, the sac explored, and copiously irrigated with normal salt solution, after which all bleeding ceased, and when found perfectly dry and clean, was packed with strips of sterilized iodoform gauze. The pulse progressively decreased from 125 to 105 at the first dressing on the third day, and has since subsided to normal, with irrigation and drainage of the cavity each second day, by Dr. Epler.

Case V.—Mrs. R., Jewess, aged 33 years, married fifteen years, no children, five miscarriages. A year ago she was curetted for endometritis, associated with some inflammatory trouble of the left adnexa. Since then she has been perfectly well. September 25, 1897, she should have been unwell, but showed only a drop; October 1st, another drop; October 4th, a slight gush. It reappeared on the 6th, but was of a chocolate color, and continued until the operation, October 17th. She was seized a week previously by a sharp, heavy, bearing-down pain in the left ovarian region that confined her to bed. I saw her in consultation with Dr. Bromberg three days afterward. There was a mass on the left side as large as a lemon, and in connection with her erratic menstrual history I expressed myself as believing she had an unruptured tubal pregnancy. I advised that she be closely watched, and asked to see her again. Another physician was called, who disagreed, and put her on local treatment. Three days later, or one week after her illness began, I was asked

to see her again, and found all symptoms changed. She had a temperature of 101° ; pulse, 120 to 130. Great abdominal tenderness, considerable distention and tympany, and increased tenderness on vaginal examination. She required $\frac{1}{2}$ -grain of morphia per day. I then inclined to the diagnosis of pelvic suppuration, believed prompt operation imperative, and accordingly had her moved to the infirmary next day. Her condition increased in gravity as the opiate was withdrawn preparatory to operation. Temperature, 103° ; pulse, 140; with bad expression and great pain at time of operation. After curettage the vaginal incision failed to find any pus, but the adhesions in the bottom of the pelvis was so dense that it was apparent at once that the operation could not be satisfactorily completed from below. Everything being in readiness for laparotomy, it was immediately performed. A quantity of extremely fetid bloody sero-pus welled over the hand. The intestines were walled off with gauze, and the patient raised in Trendelenburg's position. The left tube was found considerably enlarged, adherent behind the broad ligament, and of a livid color, mottled in places, giving it a gangrenous appearance. It was very friably attached and easily lifted into the incision. In so doing it twisted right off the uterine cornu. There was no bleeding whatever. The opposite side was examined and found healthy. The lower abdominal zone was irrigated copiously with saline solution, and the gauze pads removed. The stump was again inspected, but found dry. I refrained from ligating it, lest the ligature might cut through and occasion bleeding behind the thrombi that had evidently occluded the vessels. This may have been from torsion of the tube, but its gangrenous condition must have had something to do with it, because its separation from the top of the broad ligament was also bloodless. The only ligature required was one on an omental adhesion that glued up a rent in the distended part of the tube. This distention was nearest the cornu, about as large as a walnut, and when cut open contained an organized clot. The lumen of the tube, as it appeared detached from the horn, was of normal size, but the walls were greatly thickened. Gauze-drainage above and below was employed. Perhaps the drainage through the abdominal incision caused the wound to suppurate, which was participated in by the sinus formed around gauze leading to the necrotic stump. This required sacrifice of the wound and open treatment of both it and the sinus, which protracted her convalescence considerably, but which otherwise progressed favorably to a happy conclusion.

If I may be permitted, I will make the following recommendations in concluding this paper:

1. In unruptured ectopic gestation, the vaginal operation, if congenial to the surgeon, may be elected.
2. In non-active cases of encysted hematocele vaginal section and drainage is the operation of choice.
3. The situation of the mass low down, and the broad, roomy vaginae of parous women are favorable to the lower route.
4. Before evacuating ectopic collections per vaginam, preparation for abdominal section should be made.
5. In free or uncontrollable hemorrhage, after removing the products of ectopic gestation vaginally, the abdomen should be opened at once.
6. When abdominal section is necessary after colpotomy, the preliminary vaginal incision (*a*) will confirm the diagnosis; (*b*) facilitate the abdominal work by removing clots through the vagina instead of through the abdomen, and (*c*) establish an efficient avenue for drainage.
7. The vaginal operation in appropriate cases is attended with less mortality.

312 N. High Street.

PARTIAL REPORT OF EIGHT HUNDRED CASES
OF LABOR.*

By H. S. CROSSEN, M.D.,

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I call your attention to the fact that this is only a "partial" report. Its scope is very limited for it covers only two items—sepsis and contracted pelvis. But these two items furnish abundant material for profitable discussion.

These patients came under my care from July, 1895 to April 1st, of the present year. As most of you know, it was necessary to care for the patients in a general hospital where were treated almost all the diseases that humanity is heir to. Until very recently all the obstetrical patients have had to be delivered in the same building where patients with diphtheria, scarlet fever, measles, erysipelas, puerperal infection and other forms of sepsis were, of necessity, housed and treated. To be sure, the obstetrical patients had one division to themselves with nurses who were not allowed in other parts of the hospital; I laid down strict rules, given elsewhere, for the care of the patients in order to exclude infection; the wards were scrubbed with soap and water and then with antiseptics and then fumigated with sulphur and steam after each set of patients; and I endeavored in every practicable way to isolate this division from the remainder of the hospital. But all this is not enough. Obstetrical patients should not be handled in a general hospital if it is possible to place them in a suitable building devoted exclusively to obstetrical work. In spite of everything that can be done there is necessarily more or less communication from floor to floor of a crowded hospital, and there is contamination accordingly.

I make these remarks to emphasize the fact that the report here presented is not the report of a maternity hospital but of a *general* hospital. Under the same roof that sheltered these patients in labor there were many times that number of other patients sick with various diseases and while working with the obstetrical patients I had also to care for the others.

* Read before the Medical Society of City Hospital Alumni, St. Louis, May 19, 1898.

It seems to me that no one who has not tried it can fully appreciate the labor, the difficulties, the worry and, at times, the disappointment and discouragements that come to one who attempts to do clean obstetrical work in a crowded general hospital. Thanks to the energetic action of the Health Commissioner, and others interested in the matter, we have now a two-story brick building thoroughly modern in finish and equipment and admirably fitted for the proper handling of these patients. The statistics for the years to come should show a marked improvement over those I present to you to-night. The only trouble with the new building is that it is not large enough. Only the patients in labor and those delivered can be kept there. All the waiting patients have to be kept in the old building to be transferred to the new when labor begins.

The report of a series of obstetrical cases suggests several lines of classification and many interesting and important questions, but I will confine myself to the two before mentioned.

I. The prevention of infection of the birth-canal.

The following rules, with minor exceptions, have been in force throughout this series:

1. When labor begins give patient a large enema of soap and water.

2. Then give a general bath with soap and water (have water comfortably warm) and put on clean clothing—fresh from the laundry.

3. Then scrub the genitals, perineum, lower abdomen, thighs, and buttocks with soft soap and warm water—using the brush vigorously. When scrubbing is finished wash off the soap with boiled water.

4. Then the nurse should disinfect her hands as follows:

(a) Trim finger-nails short and clean under them.

(b) Scrub hands and forearms vigorously with brush in soap and warm water one to three minutes—giving special attention to the irregularities about the nails. Rinse off the soap with boiled water.

(c) Then scrub them in bichloride solution (1-1000) one to three minutes with a separate brush kept for that purpose.

5. Then scrub patient (genitals, lower abdomen, etc.), with bichloride solution (1-1000) (using special brush kept for that purpose). After the scrubbing, cover the genitals with a pad of absorbent cotton soaked in bichloride solution (1-1000) and wipe the other parts dry from the bichloride solution with a clean towel. The bichloride pad may be held in place by a piece of gauze fastened to a gauze

strip around the abdomen. The patient may then sit up or walk about until the pains become severe enough to confine her to bed.

6. When an examination is to be made the hands are to be sterilized as above directed and the bichloride pad is to be removed by the sterilized hands and, after the examination, is to be replaced by the same. No unsterilized object—hand, instrument, or dressing—is to be allowed to touch the genitals.

7. Immediately after the child is born:

(a) A fresh bichloride pad is to be placed over the genitals and left there until the placenta is expelled.

(b) The nurse is to place one hand over uterus and keep it there until the binder is applied. When the uterus relaxes it is to be gently stimulated to contraction by the hand placed over it.

(c) The patient is to be given a teaspoonful of fl. ext. ergot, unless otherwise ordered.

8. After the placenta has been expelled and the hemorrhage has ceased the genitals are to be washed off with bichloride solution (1-1000), with clean hands (sterilized as directed above) and the dressings applied and the binder put on.

9. Every time it becomes necessary to remove this dressing a fresh one is to be applied with the same antiseptic precautions with which the first was put in place. The hands of the nurse are to be sterilized as above directed. Catheters, douche-nozzles, and every thing else coming in contact with the genitals must pass through the process of sterilization and *nothing* unsterilized is to be allowed at any time to touch the genitals.

10. No douche is to be given except by special order. Patient need not be catheterized unless she experiences difficulty in urinating or has a severe laceration of perineum. Change dressings of patients regularly every six hours and train them, as far as practicable, to urinate only at those times.

In changing dressings:

(a) Slip bed-pan under patient, remove dressing and allow patient to urinate.

(b) Cleanse hands as directed in the "Antiseptic Rules."

(c) Wash genitals by allowing a warm bichloride solution (1-4000) to flow gently over them, apply a fresh dressing and reapply the abdominal binder.

The practice in regard to douches before and after labor has been to give no douche except there was a special indication for it. The special indications were:

1. An extraordinary amount of internal manipulation as forceps, version, or repair of laceration.
2. A focus of pus in or near the birth-canal as gonorrhœa or ulceration of genitals.
3. Macerated, decomposing fetus.
4. Hemorrhage.

These exceptional cases received one douche immediately after delivery. Some of the gonorrhœal cases received douches (creolin or bichloride) during labor and most of the operative cases received a douche just before delivery.

You will notice that I have treated these patients by the aseptic rather than the antiseptic method.

The field of operation was carefully prepared as above described and the genitals protected after labor by a large aseptic dressing.

Nice rules make very good reading but they are of no real benefit unless diligently practised. And rules for the prevention of infection must be carefully carried out in detail from start to finish. One slip opens the door to infection and may render void the watchfulness of days. Now comes the important question—have these rules been carefully observed in the care of these patients? I answer, in a general way, yes. I am satisfied that, almost without exception, all persons coming in contact with these patients have endeavored, carefully and conscientiously, to follow the directions given. And yet there have been slips—a number of them. The fact that instances of infection occurred proves this. With a clean case and a strict observance of the above rules I fail to see how there is a chance for infection.

Eight hundred and sixty-three patients were treated under these rules. There was no death from puerperal infection. The following are not included in this list; one case of rupture of the uterus, one case of Cæsarian section, two cases of uremic convulsions, two cases of symphysiotomy, and one case of fatal post-partum hemorrhage. I have excluded these because they have no bearing on the question of the efficiency of the treatment under consideration for the prevention of infection of the birth-canal, and also because it would not be just to reckon as due to puerperal infection, as ordinarily understood, deaths due to such complications.

For the purpose of analysis I have divided the cases into two classes:

Class A includes all cases in which the birth was spontaneous and with nothing to increase the chance of infection.

Class B includes all cases in which there *was* something to decidedly increase the chance of infection, as a focus of pus in or near the birth-canal, an unusual amount of internal manipulation or a macerated, decomposing fetus.

In class A belongs 662 cases. Divided according to the temperature following labor they are as follows:

Not above 100° F.....	454
“ “ 100.5 F.....	529
Temp. above 100.5°. Slight fever (either a slight rise, or of short duration) of unknown cause and disappearing without treatment of the genital tract.....	72
Temp. above 100.5°. Slight fever, probably due to trouble about perineal sutures, or vaginal or cervical lacerations, and disappearing without treatment or after a few vaginal douches..	12
Fever, clearly due to intercurrent diseases and with no evidence of infection of the birth-canal.....	30
Decided infection of the genital tract.....	19

In class B. belong 201 cases as follows:

Ulceration about the genitals.....	8
Gonorrhœa.....	28
Vulvovaginal abscess.....	2
Cyst of anterior vaginal wall.....	1
Macerated, decomposing fetus.	23
Laceration of perineum, 2nd degree.....	44
“ “ “ 3rd “	3
Breech presentation, requiring considerable manipulation of the head.....	5
Hand presenting.....	1
Prolapse of cord.....	1
Adherent placenta requiring manual removal.....	14
Post-partum hemorrhage, moderate.....	17
“ “ “ severe.....	9
Double uterus and vagina, requiring manual dilatation of os uteri and application of forceps.....	1
Craniotomy on a dead fetus.....	1
Podalic version.....	9
Forceps delivery.....	34

Divided according to temperature following labor:

Not above 100° F.....	94
“ “ 100.5° F.....	117
Temp. above 100.5°. Slight fever of unknown cause and disappearing without treatment of genital tract....	47
Temp. above 100.5. Slight fever, probably due to trouble about perineal sutures, or vaginal or cervical lacerations, and disappearing without treatment, or after a few vaginal douches..	21

Fever clearly due to intercurrent disease and with no evidence of infection of birth-canal.....	6
Decided infection of the genital tract.....	10

The thirty-six cases of intercurrent disease in the whole series were as follows:

Acute nephritis.....	1
Biliary calculi.....	1
Pleurisy, beginning before labor.....	1
Facial erysipelas, beginning before labor.....	1
Arthritis of knee, beginning before labor.....	1
Acute articular rheumatism.....	2
Phlegmosia dolens, no apparent infection of genital tract.....	1
Pulmonary tuberculosis.....	3
Malaria, decided.....	8
Caked breast.....	9
Abscess of breast.....	2
Colitis, chronic.....	1
Enterocolitis.....	1
Acute bronchitis.....	1
Measles.....	2
Pneumonia.....	1

The twenty-nine cases of decided infection of the genital tract were as follows:

Suppuration of repaired perineal tear of 2nd degree.....	3
Abscess of vaginal wall.....	1
Location of infection not recorded, fever subsiding under vaginal douches.....	3
Endometritis, subsiding after an intra-uterine douche without curettement.....	1
Endometritis requiring curettement.....	20
Salpingitis, present before labor and forming an abscess afterward.....	1

There was no death. The morbidity from well-marked infection of the birth-canal was 3 2-5 per cent.

In these cases the rise of temperature began on the first day in 3; second day, 9; third day, 2; fourth day, 5; sixth day, 3; seventh day, 4; eighth day, 1; tenth day, 1; eleventh day, 1.

Thus there were 19 cases in which the rise of temperature appeared before the fifth day and in which the infecting germs probably found lodgment in the birth-canal during labor. In the remaining 10 cases the rise of temperature appeared after the fifth day and the infecting material probably reached the genital tract on account of faulty dressing.

Nineteen of these 29 cases belong in Class A, and ten in Class B

giving a morbidity of 2.9 per cent. for the former class and 4.9 per cent. for the latter.

The complications in the cases of infection occurring in Class B were as follows:

Breech presentation, with difficult extraction of head.....	1
Laceration, perineum, and degree.....	1
Severe post-partum hemorrhage... ..	2
Adherent placenta requiring manual removal.....	2
Difficult forceps delivery.....	2
Ulceration about genitals (chancroids and gonorrhoea).....	1
Macerated, decomposing fetus.....	1

Reverting now to the general subject of asepsis in labor I desire to call attention to a source of danger sometimes overlooked, and that is the first examination to determine whether or not the patient is really in labor.

If it is suspected that the pains she is complaining of are labor pains no vaginal examination should be made until the external genitals have been scrubbed and prepared, as described in the preceding rules, and the physician's hands disinfected.

On the subject of douches in labor there has been a great deal of discussion the last few years. A large amount of valuable experimental bacteriological work has been done with a view to settling the question as to when douches should be given. I will not enter into a discussion of this subject but will simply state that, in my opinion, douches are not indicated in clean cases and that in private practice and in any but the best-arranged hospitals the vaginal douche is a source of danger. The danger is that infection will be introduced into a clean wound and that the germicidal power of the vaginal secretion will be diminished. When a douche is necessary in labor it should be given by a person who will employ strict antiseptic precautions.

A statement of the practice regarding douches in several of the important lying-in hospitals in this country may be of interest to you.

In the Jefferson Maternity of Philadelphia, which is under the direction of Edward P. Davis, one douche (1-5000 bichloride) is given before labor in normal cases and also one afterward. If sutures have been placed in the cervix or pelvic floor, a douche (1-8000 bichloride) is given night and morning after labor.

In the Philadelphia Lying-in Charity, which accommodates about 300 patients annually, a bichloride douche (1-4000) is given before

labor in normal cases, but no douche afterward. In cases necessitating forceps or version, one douche (1-4000 bichloride) is given after delivery.

In the Maryland Lying-in Hospital of Baltimore, 200 patients per year, no douche is given in normal cases either before or after delivery. In cases in which there is an unusual amount of examination, one douche of sterilized water is given before delivery. In cases of version or forceps one douche (carbolic or bichloride) is given immediately after the expulsion of the placenta.

In the Maryland Lying-in Asylum of Baltimore, 370 cases per year, no douche is given before delivery in normal cases. After delivery one douche of plain sterilized water is given. Following a forceps or version delivery one intra-uterine douche of sterilized water is given.

In the Maternity Department of the Johns Hopkins Hospital, about 400 patients annually, no douches are given—not even in operative cases.

In the Sloane Maternity, New York, which cares for about 1000 patients per year, normal cases receive one douche (1-5000 bichloride) before delivery and one douche (1-5000 bichloride) after delivery.

In the service of the Society of the Lying-in Hospital of New York, which cares for 1600 patients per year, no douche is given before delivery in normal cases. One douche (1-8000 bichloride) is given after delivery. In cases necessitating forceps or version no douche is given before delivery, but an intra-uterine douche is given after delivery. In this institution the antiseptic preparation of the patient for labor, as detailed in their 1897 report, is almost identical with the practice throughout the series of cases presented to you to-night. When I visited the institution, two years ago, I was much impressed by their splendid out-patient service. To any one looking for facts and details regarding obstetric work I would recommend the 1897 report of the Society of the Lying-in Hospital of New York.

In the California Woman's Hospital, San Francisco, no douche is given in normal cases either before or after labor. In cases necessitating forceps or version one douche (one per cent. lysol) is given before delivery and the same afterward. This is a general hospital with a lying-in department.

In the Charity Hospital, New Orleans, no douche is given in normal cases. After forceps delivery or version one douche (two per

cent. creolin) is given. The Charity Hospital is a general hospital but cares for about 270 labor cases annually.

In leaving this subject I cannot better express my present convictions than by quoting the following conclusions of Dr. Jewett of Brooklyn, as given in the "American Year Book for 1898."

1. There is no clinical proof that puerperal infection can occur from normal vaginal secretions.

2. All child-bed infection, in women previously healthy, is by contract.

3. Prophylactic vaginal disinfection as a routine measure is unnecessary, and, even in skilled hands, is probably injurious.

4. Its general adoption in private practice could scarcely fail to be mischievous.

5. In healthy patients, delivered aseptically, post-partum douching is contraindicated.

6. Clinically, in a pregnant patient, the amount of discharge, its gross appearance, and that of the mucous and adjacent cutaneous surfaces usually indicate whether or not the case may be regarded as a clean one.

7. Probable unclean contact within twenty-four or forty-eight hours before labor is an indication for prophylactic disinfection.

II. The management of cases of contracted pelvis.

The number of patients in this series with small pelvis in which interference was necessary was 27. This does not, however, represent the whole number of contracted pelvis, for a large number of patients with contracted pelvis need no assistance, but are delivered spontaneously.

In the last annual report of the hospital, which is a report of the work from April, 1897 to April, 1898, I have given a detailed account of all the cases of small pelvis coming under my care in that period. Out of a total of 396 patients measured, 28 patients, or seven per cent. had small pelvis. In 12 of these the delivery was instrumental, in 13 spontaneous, and 3 left the hospital before delivery. Half were delivered spontaneously. And I am satisfied that a careful analysis of the total 860 cases, such as I have made of the last 396, would demonstrate practically the same percentage of cases of small pelvis, viz., seven per cent. or about 60 cases in all.

Of the 27 patients with small pelvis requiring instrumental delivery, 21 were delivered by forceps, 3 by version, 2 by symphyiotomy, and one, by Cæsarian section. The worst cases are given in the following table:

INSTRUMENTAL DELIVERIES FOR CONTRACTED PELVIS.

Initials, etc.	Previous Labors.	Pelvis.	Position	Delivery.	Child.	Weight, Length.	Diam. of Head.	Remarks.
M. W., American, aged 32, 5 ft. 1 in., 142 lbs.	Three, one instrumental, one still-birth, one long, hard labor with spontaneous delivery.	Simple, flat, 21-5, 27, 30, 10, 10½, Est. C. V. 9.5 cm. (3¾ in.)	O. L. A.	Head failed to engage. Delivered by podalic version.	Female, living.	10 lbs. 21 in.	B. P. 9.5 cm. B. T. 7.5 cm. O. F. 11 cm.	
C. W., colored, aged 28, 5 ft. 6 in., weight not given.	None.	Simple, flat, 24, 27, 30, 18.5, Est. C. V. 9.5 cm. (3¾ in.)	O. L. A.	Head failed to engage. Delivered by high forceps.	Male, living.	6 lb. 18.5 in.	B. P. 7.7 B. T. 6.5 O. F. 11.5	Diagonal conjugate diameter of pelvis not recorded.
M. C., Ireland, aged 25, 4 ft. 9 in., 115 lbs.	None	Generally contracted, 25, 26, 29, 16, 10, Est. C. V. 8½ to 8¾ cm. (3¾ in.)	Breech, S. L. A.	Delivered by Caesarian section after head and neck due to been in labor long press. about 60 hrs. sure in the uterus. Died res. Birth after four of the living days, apparently from the intact cerebral pelvis im-injury possible.	Male, had deformity of head and neck due to been in labor long press. about 60 hrs. sure in the uterus. Died res. Birth after four of the living days, apparently from the intact cerebral pelvis im-injury possible.	6¾ lbs. 20.4 in.	B. P. 9.5 B. T. ? O. F. 12	Patient died the fourth day of peritonitis. Post-mortem examination showed edges of uterine wound well approximated but inflamed. Peritoneum apparently infected from the uterus. Direct measurement of true conjugate diameter, 8¾ cm. (3¾ in.) In this case I was very much in favor of inducing premature labor in the 36th week of pregnancy and then doing symphysiotomy if necessary. But I yielded to the consultant in the case, who advised the course here pursued. I think the former plan would have been better. The Caesarian section, if made at all, should have been done early instead of after 60-hours labor.

<p>A. K., American, aged 21, 4 ft. 8 in., 124 lbs.</p>	<p>None.</p>	<p>Simple, flat, 24, 26, 30.5, 19. Est. C. V. 10 cm. (4 in.)</p>	<p>O. L. A. Head failed to engage. Highforceps delivery.</p>	<p>Female, liv- ing.</p>	<p>8.5 lbs. 19.3 in.</p>	<p>B. P. 10 B. T. 9 O. F. 12</p>	<p>Patient recovered from opera- tion and was walking about. Had severe unilateral headaches during pregnancy and two con- vulsions after delivery. Died suddenly one month after delivery. Post-mortem examina- tion revealed a large tubercular mass in right occipital lobe of brain. Two or three tubercular bronchial glands. Close, firm, fibrous union at pubic joint. Uterus small and clean. True conjugate diameter, by actual measurement, between 8 and 8 $\frac{1}{4}$ cm. (3 $\frac{1}{4}$ in.) Case reported in full in <i>Medical Review</i> of Octo- ber 31, 1896.</p>
<p>S. L., colored, aged 24, 5 ft. 2 in., 90 lbs.</p>	<p>None.</p>	<p>Generally contracted, 22, 24, 29, 16, 10. Est. C. V. 8 $\frac{1}{4}$ cm. (3 $\frac{1}{4}$ in.)</p>	<p>O. D. A. Symphysiot- omy after patient had been in labor about 40 hrs. when a mo. Birth of liv- ing child without op- eration im- possible. Child de- livered by forceps after symphysiot- omy.</p>	<p>Female, liv- ing. Baby taken from the hospital when a mo. Was then in good health.</p>	<p>6 lbs. 18 in.</p>	<p>B. P. 7.5 B. J. 7 O. F. 11</p>	<p>Child was large and the diffi- culty in extraction was due to the head being such a tight fit for the pelvis.</p>
<p>C. H., Ireland, aged 26, 5 ft. 5 $\frac{1}{2}$ in., 150 lbs.</p>	<p>None.</p>	<p>Simple, flat, 25, 28, 30, 20, 11.5. Est. C. V. 10 cm. (4 in.)</p>	<p>O. D. P. Head failed to engage. Podalic ver- sion and very difficult extraction of head.</p>	<p>Male, living.</p>	<p>9 lbs. 21.5 in.</p>	<p>B. P. 10 B. J. 8.5 O. F. 11.5</p>	<p>Child was large and the diffi- culty in extraction was due to the head being such a tight fit for the pelvis.</p>

Initials, etc.	Previous Labors.	Pelvis.	Position	Delivery.	Child.	Weight, Length.	Diam. of Head.	Remarks.
A. R., American, aged 15, 4 ft. 8½ in. 100 lbs.	None.	Generally contracted, 22.5, 26, 28, 17, 10, Est. C. V. 8½ cm. (3½ in.)	O. D. A.	Head failed to engage. High forceps delivery. A very severe forceps case.	Male, living.	8.5 lbs. 20 in.	B. P. 9 B. T. ? O. F. 12	In this case in the examination under chloroform the head felt rather small and yielding. Hence the choice of high forceps instead of symphysiotomy. If the head had been a trifle larger or more completely ossified it could not have been delivered by the forceps and the attempt would have been harmful.
B. B., colored, aged 20, height and history not recorded.	One. Probably a premature birth—history not satisfactory	Laterally contracted—22, 23, 30, ? to cm. (4 in.) Est. C. V. 9 cm. Transverse diameter of pelvic inlet 9 cm. (3½ to 4 in.)	O. L. A.	Head failed to engage after labor (28 hrs) with strong pains. Examination under anesthesia revealed decided lateral contraction of pelvis and head too large for inlet. Birth of living child impossible without operation. Delivered by symphysiotomy.	Female, living.	8.75 lbs. 19 in.	B. P. 9.5 B. T. 8.5 O. F. 11.5	Unfavorable case for symphysiotomy or any other operation. Chronic cystitis. Blood passed from bladder during labor (before operation). Died one month later of chronic sepsis, apparently from bladder, sinus into pubic joint which did not heal. Considerable separation of joint surfaces. No pocket of pus nor dead bone. No decided kidney lesion. Baby was well until two weeks old and then died of enteritis.

SMALLEST PELVIS WITH SPONTANEOUS DELIVERY, SHOWN IN THE RECORDS.							
M. M., German, aged 39, 5 ft., 150 lbs.	Eleven, six boys, all in- strumental. Five girls, none instru- mental.	Simple, flat, 23, 28, 33, 19. Est. C. V. 9 1/4 to 10 cm. (3 3/4 in.)	O. D. P.	Head failed to engage. Podalic ver- sion, forceps to after com- ing head.	Male, living.	7-5 lbs. 18 in.	B. P. 10 B. T. 8 O. F. 12
S. C., colored, aged 15, 5 ft. 1 in., 125 lbs.	None.	Generally contracted, 21, 23, 30, 19, 11. Est. C. V. 9 1/2 cm. (3 3/4 in.)	O. L. A.	Head failed to enter pel- vis. High forceps de- livery.	Male, living.	11 lbs. 20 in.	B. P. 9 B. J. 8.5 O. F. 12
A. D., American, aged 21, 5 ft., 104 lbs.	One, no particular trouble.	Generally contracted, 21.5, 25, 29, 18, 11. Est. C. V. 9 1/2 cm. (3 3/4 in.)	O. L. A.	Spontaneous delivery. Duration of labor 5 1/2 hrs No trouble.	Male, living.	8 lbs. 20 in.	
N. H., colored, aged 25, 5 ft., 6 in., 135 lbs.	Four, nor- mal.	Simple, flat, 24, 26, 30, 18, 11. Est. C. V. 9 1/2 cm. (3 3/4 in.)	O. D. A.	Spontaneous delivery. Duration of labor 8 1/2 hrs No trouble.	Female, liv- ing.	8 lbs. 21.2 in.	B. P. 9.75 B. T. 8 O. F. 12

In these two cases the labor was of short duration. The average duration of labor for the last year in cases of spontaneous delivery (342 cases) was 15 hours for primipara and 11 hours for multipara.

There were patients with a larger true conjugate diameter who had prolonged labor on account of the pelvic contraction. For example, in one case with an estimated true conjugate diameter of 10 cm. (4 in.) the duration of labor was 39 hours.

In the management of a case of small pelvis the first thing to do is to make an examination to determine how much contraction is present. With but little trouble the dimensions of the pelvis may be determined with approximate correctness. In the hospital I have had the pelvic measurements taken and recorded as part of the regular history of every pregnant patient. And I have learned, by experience, to depend on these measurements as establishing or excluding, as the case may be, one of the most serious of obstetric complications.

When confronted with a case of difficult labor almost the first question that suggests itself to me is as to the size of the pelvis. In the minor degrees of contraction the labor will, of course, be only slightly influenced, or, if the child be small or the pains very strong, nothing unusual may be noticed.

In the next grade come the cases of prolonged labor, of high forceps delivery and of version. These cases require careful handling but present no special difficulties. The points in their successful management are:

1. Determine, by external and internal measurement, the size of the pelvis—that is, that there is a moderate, and only a moderate, contraction.
2. Determine, as far as possible by ordinary abdominal and vaginal examination, if there is any other complication.
3. After the natural forces have had a fair trial, examine the patient under anesthesia, with the whole hand in the vagina, to determine more accurately the relative size of the head and pelvis and also to determine if there is any complication not discovered in the previous examination.
4. Deliver by forceps or version, after the thorough examination has shown that the case is a suitable one.

It is better usually to have everything ready for delivery before beginning the examination under anesthesia and then, if the examination shows the case to be a proper one, deliver at once.

The examination under an anesthetic with the whole hand in the vagina is very important. It gives one a knowledge and grasp of the situation obtainable in no other way. The relative size of the head and the probability of further moulding can thus be approximately determined. As to the choice between high forceps and version, it has been my custom to use the forceps if the head was in good position and pressed firmly against the pelvic entrance, and to employ version if the head was not in good position or was freely

movable above the brim. When the pelvic contraction is marked and the case promises to be a severe one, I have more confidence in the high forceps than in version.

Next come the high grades of contraction where the delivery of the living child at term through the intact pelvis is impossible. In the cases of flat pelvis, with a slight general contraction (the pelvic deformity frequently found in this country) an external anteroposterior diameter of 16 cm., with a diagonal conjugate of 10 cm. (4 in.), warrants the assumption that the delivery at term will be impossible without Cæsarian section or symphysiotomy or craniotomy. And these measurements are, I think, a clear indication for the induction of premature labor in the 36th week, or earlier if the pelvic deformity be more marked. Occasionally it is possible to deliver such a patient at term, by forceps or version, but such is very rarely the case, and it is certainly not proper to subject a patient to the risk of the serious operations before mentioned when the induction of premature labor will give the baby a fair chance of life without great danger to the mother.

But the cases of marked pelvic deformity in which labor has begun, or the child is at term, are the trying ones. Then comes the question of choice between Cæsarian section, symphysiotomy or craniotomy.

This is not a theoretical theme. It is intensely practical. I have had this question come up for immediate solution a number of times and it has fallen to my lot to do each of the operations mentioned. Any worker in obstetrics may have the question forced upon him by a case at any time. Several persons present have no doubt given this subject special consideration, and I hope to hear their conclusions. I am aware that the tendency for some time past has been toward Cæsarian section or symphysiotomy in every case in which the child is living. I think this is not a safe rule. Each case is a study in itself and we should always bear in mind that the life of the mother is of far more value than the life of the child. Every effort to save the life of the child is praiseworthy if it does not unduly jeopardize the life of the mother.

The mortality of Cæsarian section, in favorable cases and by skilled operators, is reckoned at about 10 per cent., and symphysiotomy under the same circumstances should show a decidedly smaller mortality. As given in the "American Text-book of Obstetrics" (1895), in the 79 Cæsarian sections which had up to that time been performed in the United States since the adoption of the present

method of operating the maternal mortality was 35 per cent. and the infantile mortality 12 per cent.

In the 72 symphysiotomies which had, up to that time, been performed in the United States, the maternal mortality was 14 per cent. and the infantile mortality 26 per cent. Of course these are old statistics, as that was three years ago, but it shows what happened before there came into practice the careful selection of cases and early operations of the present day.

The best Cæsarian-section record of the world up to that time came from Leipsic and was 54 cases with only three deaths—a mortality of 5.5 per cent. Morisani's results with symphysiotomy were 55 cases with two maternal deaths and three children lost—a maternal mortality of 3.6 per cent. and an infantile mortality of 5.5 per cent. Zweifel in 23 symphysiotomies had no maternal death and lost but two children.

But these are the results of experts, of men who have had an extraordinarily large experience in these particular operations, and the results, while furnishing a goal to work to, cannot be taken as a guide by operators generally.

As near as I have been able to determine, the mortality of Cæsarian sections, when undertaken at a reasonable time while the patient is still in good condition, cannot be reckoned at less than 10 to 15 per cent. And in unfavorable cases, or surroundings, it should be reckoned at 40 to 50 per cent. The Porro operation, while ordinarily more dangerous than the classical section, certainly gives better results in cases that have been subjected to prolonged internal manipulations. Being interested to know just what results have followed Cæsarian section in St. Louis, I have made inquiries. From the extent of these inquiries I think I have gotten most of the cases in St. Louis and vicinity during the last ten years. Some of the cases have no doubt been missed, but probably not many. The number of cases reported to me of Cæsarian section or modification, exclusive of operations for extra-uterine pregnancy, was 31. Of these, 16 mothers recovered and 14 children recovered. I understand that one of these patients was in collapse, from unavoidable hemorrhage, and really dying, at the time of the operation and that the operation was for the purpose of saving the child. Excluding this case, which it would hardly be proper to class as an antemortem operation, we have 30 cases with the recovery of 16 mothers and 14 children. Maternal mortality 46 per cent. and infantile mortality 53 per cent. Of course this is only a rough estimate. The cases still not heard from might

reduce this high mortality percentage. A classification of the cases according to the year of the operation might make a much better showing for the last few years.

A summary of only the cases operated on by persons having a very large experience in abdominal work would probably show a higher percentage of recoveries. The best individual record was four recoveries out of five cases, the one patient dying being the first operated on.

The high mortality percentage for St. Louis is, I think, due mostly, not to lack of skill in operating or to faulty asepsis during the operation, but to the poor condition of the patient from long waiting and repeated manipulations within the birth-canal. The high infantile mortality bears out this view, for if the operations had been undertaken before the children were seriously injured, by the long continued uterine and abdominal contractions or by repeated attempts at delivery by forceps, we would not have had an infantile mortality of 53 per cent. The loss of infants in properly selected cases is only 5 to 10 per cent.

This showing is not pleasant to face, but the more promptly it is faced and thoroughly understood the quicker will the remedy be applied. The remedy is the general adoption of more thorough methods of examination of obstetrical patients, especially pelvimetry and, in difficult cases, the examination under anesthesia with the whole hand in the vagina to determine just exactly what is the trouble before applying forceps. This examination under anesthesia should be made before the patient is exhausted by long labor, the pelvic tissues injured by pressure and the birth-canal infected by too many digital examinations. There is another lesson I draw from these cases, and that is that if the case is not seen until late, when the condition, general or local, of the mother is poor and the child probably injured by long labor or attempts at delivery, it is better to do craniotomy. The life of the mother should be counted more valuable than the life of the child. Cæsarian section at the proper time in suitable cases has achieved results that no amount of prejudice should blind one to and that no number of unfavorable cases can cover up. These splendid results constitute one of the signal triumphs of modern surgery. But Cæsarian section in unfavorable cases, such as those above mentioned, has sacrificed many mothers to save children that could not live after all. It seems to me that the following conclusions outline the proper procedure in cases of contracted pelvis:

1. When the true conjugate diameter is $7\frac{1}{2}$ to 9 cm. (3 to $3\frac{5}{8}$ in.)

(a) If seen before the 36th week of pregnancy, induce premature labor and follow by symphysiotomy if necessary.

(b) If seen early in labor, perform symphysiotomy. If the disproportion between the head and pelvis is slight, give axis-traction forceps a fair trial before symphysiotomy. If the disproportion between the head and pelvis is so great that there is serious doubt as to whether the head can be safely delivered after symphysiotomy, then choose Cæsarian section instead.

(c) If seen after prolonged labor or repeated attempts at delivery by forceps, perform craniotomy.

2. When the true conjugate diameter is between $6\frac{1}{4}$ and $7\frac{1}{2}$ cm. ($2\frac{1}{2}$ and 3 in.).

(a) If seen before the 36th week, allow pregnancy to proceed to term.

(b) If seen early in labor, perform Cæsarian section.

(c) If seen after prolonged labor or repeated attempts at delivery by forceps, perform craniotomy. If the patient insists on Cæsarian section, a Porro operation is the best form for these late cases.

The measurements given above apply to the flat pelvis and to a fetal head of normal size.

In a generally contracted pelvis a larger anteroposterior diameter is required and in a laterally contracted pelvis, a still larger one.

If the head is decidedly small, then, of course, a smaller anteroposterior diameter will suffice.

The relation of the size of the head to the pelvis and the best means of determining the relative size of the two I have given in detail in the report of a case of symphysiotomy, before the St. Louis Obstetrical and Gynæcological Society and published in the *Medical Review* for October 31st, 1896. Any one interested in the subject of pelvic measurements and their indications for symphysiotomy will find the subject reviewed there at considerable length.

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EDITORIAL.

THE OUTLOOK.

It is, we think, an undisputed fact that never in the history of medicine in this country have medical men been so driven to acquire a livelihood, has the dollar been so hard to earn and to collect, as in the past half decade. The cause of this has often and at many different times been rehearsed in this JOURNAL. The foundation cause is of course the entire lack of unity, the eccentric action—too thoughtless to be called policy—of the medical profession, which scatters its forces instead of garnering them, which encourages and fosters only the principle “that each man must work for himself alone” instead of “that all should work together for the common good.” While this radical cause of weakness exists the outlook for permanent prosperity, for our rehabilitation in the respect and recognition both of the social and political world, is hopeless. For there is no disguising the fact that this recognition and this respect which formerly was ours by right of membership in a learned profession universally throughout this country no longer exists except in the South and in our smaller towns. And even there the exception is merely an apparent one, because these men take their social position with them into their profession and recognition is still given to the man and not to the physician. The old days when the degree of Doctor of Medicine conferred also a patent of gentility, to which standard the recipient was forced to live up no matter what he was before, when this degree also presented opportunities of the highest potential in-

fluence in the State and in the framing of our laws, as the history of this country shows, have alas! passed away without hope of return. It has been shallowly said that the cause of change in our social and political status as a profession is that this country is becoming less "provincial"—a term which, it would seem, unlike charity covereth a multitude of virtues—and that as it becomes more civilized it knows too much to submit to traditional respect for a badge of learning. This explanation is indeed a statement of a fact but it explains—nothing.

The real lesson of this fact is that with our advance in "civilization" our national respect for all things not representative of *material* power—money value—has proportionally waned. And what power have we as a profession? Do we command the attention of legislators? Do we make a serious impression even upon the public when with combined voice we denounce a flagrant injustice or protest against an open public abuse? Why here in New York, where we are most numerous, are richest and best organized, with the most strenuous efforts of the County Medical Society, its aggressive protests in Albany and violent denunciations in the public press, have we succeeded in stopping the infamous hospital and dispensary abuse? It is doubtful if a single man, woman, or child, among the half million, who last year indulged in free medical and surgical treatment in the Borough of Manhattan has abstained from this luxury, for all the medical pother.

It is a sad fact that our fellow citizens have come to realize that we, as a body, have neither power nor influence even over our own members, and very naturally they feel that it is not worth while not to ignore us. They see that our societies have no disciplinary power which they dare to use, that every effort at united action for the common good is swallowed up in the struggle for personal and individual advantage, with the mutual suspicion engendered thereby, that these societies have degenerated largely into "debating societies for the furtherance, by mutual consent, of individual advertisement through the medical press." In a word, it is apparent to all that we have not the will to use power, if we had it, nor the power to use, had we the will. The medical press—the most potential influence obtainable—is not ours, but is in the hands of lay-publishers; *and the profession is indifferent!* Medical literature is not ours; it is also in the hands of laymen. Hospitals and dispensaries, the drug trade, the manufacture of our instruments—in all these things we have no part, exercise no supervision, possess no influence ex-

cept in so far as the exigencies of trade or the good-will of *laymen* permit our individual participation. In this sphere which is naturally ours, where we should as a united profession command, whose powerful influences we should control, we exist on suffrance. *And the profession sees all this and is indifferent!* Let us take what consolation we can. And this one is still left us: If we continue to throw away our opportunities for power and influence, which nowadays in the battle of life are synonymous with money, we may console ourselves with the reflection that what we throw away will not be wasted. If we continue to be useless to ourselves and blind to our own advantage, we shall still be exploited as an easy medium for filling the pockets of wiser combinations of our fellow-citizens.

And this our *Outlook!* While present conditions prevail among us, while the profession persists in considering itself and all its relations from the standpoint of the first person singular, this outlook must remain unchanged. It matters not very much whether the present war brings an apparent prosperity, temporary or more enduring, to this country with the freer spending of money; a few of us may have larger incomes for a time but the profession will not be prosperous. More free (!) institutions will be built, patients will still begrudge the doctor his fee and pay the butcher, the dressmaker, and the grocer first. And only a radical change of disposition in the profession itself can change the outlook of the profession.

CORRESPONDENCE.

PUS IN THE PELVIS.

PHILADELPHIA, PA., June 1, 1898.

To the Editor of the American Gynæcological and Obstetrical Journal:

SIR: My letter published by you in the May number of the JOURNAL, in which I criticized Dr. J. Taber Johnson's paper on "Pus in the Pelvis," seems to have caused misapprehension as to my meaning in the minds of some, and lest the impression should be general, I desire most emphatically to disavow any personal intent in the matter. I do mean to criticize some of Dr. Johnson's surgical views, but that is entirely a scientific matter and far from personal. Had Dr. Johnson been a less eminent authority in gynæcological matters I should have hardly considered it worth while to give prominence to, from my own standpoint, his error in the matter.

But it behooves those whose teaching is considered authoritative to be accurate in statements, especially when attempting to prove or disprove a scientific point.

As to the general proposition made by Dr. Johnson that it is practically almost absolutely safe to open the vaginal cul-de-sac and empty out pus, I take it no one will attempt to gainsay; it is a thing we all do with excellent results. But to confuse this procedure, which is the old familiar operation (if it can be so called), with the removal of the diseased parts is entirely another thing. Why when one is talking of opening an abscess should one go out of one's way and criticize abdominal section, which can only be compared to the vaginal section which attempts to remove the diseased part? And why even when making such a comparison use the statistics of those who have notoriously had bad results or who have reported only their first cases and not their subsequent and more matured experience?

I criticize no paper which tries to build up its own particular subject, but when in doing so it unjustly pulls down something which is far its superior, then I think we all have a perfect right, nay duty, to demand accuracy in statements and proper and fair comparisons. It certainly is not fair to give the best results obtained for vaginal work and compare it with about the worst obtained by the abdominal method. There are eminent men who say in vaginal operations there is no shock, in other words they, in their work get no shock of consequence. On the other hand, there are equally as eminent men who say that in the same class of cases by the abdominal route there is no shock; that is, they see none of it in their own work.

Again, the first class of men claim they have a very small mortality by the vaginal method, and on the other hand, the abdominal operators claim in exactly the same class of operations that they have an equally small, if not smaller, mortality, with the added advantage that all their operations are completed in the sense that the diseased parts are always removed.

What is the result? The man advocating the vaginal method of operating, nine cases out of ten in making a comparison of the two methods, keeps on harping on the fact that there is little or no shock by the vaginal, and inferentially, that there is by the abdominal, method, in spite of the fact that equally as good men assert that the abdominal is as free as the vaginal in this respect. Further, in quoting statistics for purposes of comparison they almost totally ignore the figures given out by the professed advocates of the abdominal

method, which, it is unnecessary to say, compare more than favorably with the best vaginal figures ever as yet produced, but publish long lists of quotations to sustain their point, giving mortality-percentages that ought to force the men making them from surgery as a business.

The only inference to be drawn from this persistence and almost universal practice, is that the statistics produced by the abdominal advocates are not considered reliable: and yet who has the right to doubt the work of such men as Kelly, Penrose, Noble, Krug, Price, Ashton and a dozen others who might be mentioned? And why is it that the abdominal statistics of these men are rarely ever put side by side with the statistics of the vaginal work of a similar character? And why is the work of men with a mortality ranging from fifteen per cent. to thirty per cent. used instead? It may help to bolster up the vaginal work, but does it not also harm to an equal degree the abdominal? We all do vaginal operations in suitable cases, the difference is in opinion as to the cases proper for one route or the other. But in discussing this matter there is no reason for being unfair, to say the least, to either method.

I am a firm believer that as a matter of choice the abdominal route is the proper one for all pelvic diseases in all but a few exceptional cases. However, I am not infrequently as a matter of expediency forced to the vaginal route. It is because of my belief in the efficacy of the abdominal route that I protest against the manner of most vaginal advocates discussing the matter in the manner they do. My protest in Dr. Johnson's case was intended as perfectly impersonal, but I hope the incident will tend to bring about a better understanding and force a stricter adherence to the best ascertainable facts.

J. M. BALDY.

TRANSACTIONS OF THE CHICAGO GYNÆCOLOGICAL
SOCIETY.

Stated Meeting, April 15, 1898.

The *President*, HENRY P. NEWMAN, M.D., in the Chair.*The Nature and Management of Puberty.*

BY W. S. CHRISTOPHER, M.D.

(See page 1.)

DISCUSSION.

Dr. JOHN C. COOK: I feel wholly inadequate to discuss this subject on account of not expecting to speak. The Society should feel grateful for the privilege of listening to the interesting remarks of Dr. Christopher. There are a few points that are worthy of consideration. We are too careless in the general management of individuals at and during the period of puberty. Perhaps the separation of the sexes at this time is well for both male and female. Undoubtedly the impoverished condition of which Dr. Christopher speaks is responsible for gynæcological troubles in the future. So far as the female side of the subject is concerned, I do not feel that I have given it thought enough to contribute anything of interest. I have, however, studied the subject some on account of having a boy taken out of the public school last summer at my request, not that I thought he was particularly overworked at the time. I did, however, think that mixing of the sexes was bad for him. He was put into a boy's manual training-school, and I have been surprised at the quietness, and the better manner with which he has done his work.

There is one thing, I think which will help to improve the impoverished condition, and that is the matter of respiration at the period of puberty. As Dr. Christopher says, children are weakened; the food is not always in harmony with the expenditure of force, and they become impoverished. I have found that by advising children, especially girls, to stand up straight, and breathe fully, they have improved more rapidly than by any other advice. We know that tuberculosis begins in the apex of the lung. Doubtless the condition favorable for its development begins in puberty, in the drooping:

over of the chest, and the poor inflation of lung tissue. Boys have a decided advantage over girls in that they play hard. In managing girls at this period. they should be taught to straighten themselves up and to inflate the lungs in such a manner that the nutrition will be greatly increased by so doing.

How to Reconcile Modern Educational Methods with the Demands of Health.

BY BAYARD HOLMES, M.D., AND W. O. KROHN, M.D.

(See page 10.)

DISCUSSION.

DR. ALBERT GOLDSPOHN: It is undoubtedly a very striking fact with any honest physician that female disorders are excessively prevalent, as compared with all other affections, and to any one who is conscientious it his duty to search for the cause. We do not have to look very far, for one of the more prolific causes is from that source which is being discussed this evening. I am very glad the subject has been presented. I have learned a number of things that interested me, especially from the last speaker. In a general way the principles that were advocated by Dr. Christopher have always been my view. The instances where I have ordered girls between twelve and sixteen to remain out of school for a year or more have been quite numerous, and while I have not seen such striking phenomena as Dr. Christopher speaks of, such as cessation of epileptic manifestations, I have seen marked results from such treatment or advice. For instance, the cessation of excessive menstruation in those who were already menstruating; the cessation of persistent headaches, of nose-bleed, of vertigo, of dyspeptic phenomena, and occasionally of persistent neuralgias. All of these I have seen decidedly improved and oftentimes completely removed after several months of idleness mentally. Of course, to this advice I would usually add that they should exercise as much as possible in open air, and avoid sedentary employment. Needle-work, much sitting of any kind was prohibited just as much as mental work, but bodily exercise encouraged. General housework is about the only thing I would permit for those who remained indoors, for it means a change of posture, standing, walking, sitting, not much of any one continuously, but an interchange of them.

The ideas presented by Dr. Holmes I wish to second very heartily. It is certainly a fact—and our mothers are to blame chiefly—that our daughters are being cultivated as flowers to grow, or to exist on some kind of fragile stem as a flower without a plant. It is the cultivation of intellect without that of the body.

As to what the anatomical conditions are in the girl in development, which result in consequence of excessive mental strain and insufficient bodily exercise, Dr. Holmes very properly calls attention to the convoluted tube in the girl; it being not perfectly developed in later years. But to that we should add the further, even more important, feature, that the body of the uterus is the portion which the girl acquires during the later years preceding puberty. If arrest of development occurs, we have the cervix, but an imperfectly developed body. The imperfect development of the body being as to its size, thickness, and stiffness; so that when the normal play of forces within the abdomen occurs—referring now to intra-abdominal pressure—this placid, flexible, non-resistant body of the uterus, as it receives the impact of intra-abdominal pressure from the posterior side as it should, is bent over forward, and thus we have the origin of pathological ante flexion and obstructive dysmenorrhœa, a thing existing only in a nulliparous uterus, but causing much suffering and often permanent harm in thousands of girls. If, on the other hand, perchance, intra-abdominal pressure strikes the imperfectly developed body of the uterus, not posteriorly, but anteriorly, it drives it, in view of its proportionally weak ligaments, into the small pelvis, and we have then a girl developed with relaxed ligaments, with a retroverted uterus from the beginning, or a congenital retroversion with the train of evils that follow it. I need not refer to these at length now. So the whole matter is one that should be thoroughly understood by the general family physicians, those who come in contact with the thousands of girls at that stage. Gynæcologists do not see them at this period generally, but the family physicians are the men who should know the importance of ordering very many of the girls out of mental occupation or sedentary employment or habits for a year or so, and into bodily exercise and outdoor employment as a necessary feature in their proper development.

Dr. SARAH HACKETT STEVENSON: While I do not think I can add anything of interest to what has already been said, yet I have been very much interested in Dr. Krohn's exposition of the subject. I am glad to see that he recognizes the real facts in the case. My own experience has taught me that it is not the educated women, the women

who have been in schools and become mentally developed, who are the invalids. Before I went abroad I was led to believe that American women were the most sickly women in the world, all on account of going to school and obtaining so much education, and I was quite astonished to see the dispensaries and hospitals filled with women who had never crossed the threshold of school-houses, and suffering from all kinds of diseases. Our foreign physicians certainly do not get their material from American women, and the cause of diseases of women is not to be laid to the education of women. I am sure that it has some other foundation. Indeed, I am rather inclined to think that the fact of a girl being in school and having a certain amount of discipline during pubescence is rather beneficial than otherwise.

The real point of Professor Krohn's remarks is that there should be a difference made in the studies at the time of pubescence; but away back of it all is the preparation for puberty. First, in heredity; second, in infancy. If all of the education that precedes puberty were normal, I am quite sure puberty would take care of itself.

Dr. ERRANT: I want to say a word or two with regard to the educated woman and the effect of mental development on puberty. While I believe it is a good thing for a woman to be educated, at the same time I believe that at the age of puberty the mental strain and stimulus given to a girl through competition with boys in the school does have its effect. I agree with Dr. Stevenson, that if mental strain is prevented at the age of puberty, it may not have its effect. I think we have a great deal of ill health in American girls to-day on account of bad hygienic surroundings and the lack of social training. I think many a girl in school to-day could carry on her school duties and what home duties she has if social duties were not placed upon her at a time when they ought not to be.

Dr. FENTON B. TURCK: There has been much said to-night regarding the question of food for the mind, and how it should be given to the child, how it shall be treated, and the amount and kind of exercise that the child should receive. But there has been nothing said with reference to that important subject, dietetics. If we had a more complete knowledge at the present time of a system of dietetics, arranged according to the age, time, and conditions of the child, the amount and kind of food required for the child to supply the energy expended, we would solve many of the difficult problems of education. This may seem a rather astonishing statement to some of you, but statistics will show that malnutrition in school

children is the first condition which faces not only the medical man, but it is also observed by the teachers. What does the blanched face and lack of energy indicate? If we count the blood-corpuscles of these children we will find that they are often materially decreased in number, and will find associated more or less congestion of the viscera. In these conditions we find a state of excitation, nervous disturbance, interference with the appetite and digestion. There may be a desire on the part of the child to eat at all times and to partake of all kinds of food. Instead of acting as food should, this interferes with normal digestion, and toxins are formed which act on the vascular areas, producing marked congestion. Elimination is interfered with.

Because of deficiency in respiration the young girls are affected more than the boys. There is less respiratory effort on the part of the girl. The gastric organ is carried up and down, and part of the churning process is carried on by the movements of the diaphragm. The boy, therefore, receives a greater amount of energy in the mechanical preparation of the food. It is a frequent thing for these children to partake of doughnuts and wash them down with ice-water, and then run back to school. The child carries a cold lunch to school, eats it rapidly, and evil results follow. Instead of the process of digestion going on properly, we have the formation of toxins and their deleterious effects not only upon the gastro-intestinal walls, but also upon the vascular area, especially upon the splanchnic vessels.

We find constipation associated with gastro-enteroptosis. We find it more so in women, attributed to the fact of their wearing corsets, but the fact is that most all of these disturbances of prolapsis of the various organs in the body are due to malnutrition. All of these conditions interfere with normal digestion. With the absorption of toxins there results marked atony of the stomach and intestines. We have not sufficiently studied the degree of lack of motor power of the stomach, and the effects of this important condition upon the child. The majority of disturbances in children arise from malnutrition, produced by disturbance of the gastro-intestinal tract.

I saw the other day, while passing a school, a pedler, who had candy, pies, and cakes, and all of the children were swarming about him. All of these things are gastric irritants. The children are not educated to do otherwise. Even their mothers give them money with which to purchase these poisons, and even allow them to eat it

at home, to further carry on these destructive effects upon the child. As they grow up and a great amount of mental work is thrown upon them, they are incapable, not on account of lack of brain-power, but due to a general weak physical condition resulting from errors of diet. It is true, we know, that in medical colleges the women can recite better than the men. We know, too, that in our younger days at school the little girls got ahead of us in our studies. It is not a question of lack of mental development, but we find that in women there is a lack of physical exercise, combined with errors of diet. In conclusion, I would advocate a more careful study of dietetics in relation to the girl's development.

Dr. FRANK S. CHURCHILL: I have little to add to this discussion. There is a great deal of truth in what Dr. Turck has just told us with reference to dietetics. A great deal of attention has been paid, recently, to the study of gastric troubles in infants, but in older children the gastro-intestinal tract has certainly not received the attention which it demands. Another very important thing is the subject which has been alluded to repeatedly by all of the speakers, namely, the great importance of not overburdening or overstraining children at the age of puberty, overstraining the nervous system at the expense of the physical body. So it is of the utmost importance for us to encourage outdoor exercise and sports, among both boys and girls, and to get them into the open, fresh air as much as possible. Among the children of the well-to-do it is a simple problem to give them fresh country air. Among the children of the poor it is, unfortunately, a much more difficult problem, and one to which more attention ought to be paid.

It is an encouraging sign that girls in schools, as well as in colleges, are manifesting a tendency, and are encouraged by their parents and teachers, to take up athletics.

In our colleges for girls the game of basket-ball is played hard and enthusiastically, not only by a few girls, but by a great many of them, and it is a great benefit to them, I am sure. And the game of golf is taken up by them, and tennis has been, and is being played by them, and exercises in that direction cannot be too much encouraged. It is by such means that we can best build up a strong physical body, which will be better able to stand the nervous strain which our complex life necessarily entails.

Dr. C. S. BACON: The subject that is before us to-night is the management of puberty—the problem of carrying the girl, particularly through this stage, in such a manner that she shall come forth

strong and sound. We have considered chiefly three questions: those of nourishment or nutrition, exercise, and schooling or education. There is no difference of opinion as to the importance of nutrition at this period, and the bearing of dietetics on it has been very well alluded to by Dr. Turck. The possible harmfulness of exercise was given unusual prominence in the paper of Dr. Christopher. The idea that I received from his presentation of the subject was that there is only a certain amount of force in a given quantity of nourishment, and this force is ordinarily expended in the development of the body and the necessary activities of the body. At the time of puberty an additional amount of force is required by the developing sexual system. Without an increase in nourishment there will remain less energy to be expended in exercises, which, therefore, may become harmful if it withdraws energy needed for sexual development. The logical outcome of this reasoning, the recommendation of laziness, seems to me rather questionable advice, because exercise plays a very important rôle in the development of the body, in the proper elimination of waste material from the body, and I believe, if carefully regulated, can never be undesirable.

In regard to schooling, the very interesting presentation of the subject, which was given by Dr. Holmes, expresses, I hope, the opinions of the majority of physicians at the present time, who have given any attention to the subject. The statements he made I agree with exactly, with the exception of the object of the school, or the object of the method of instruction which he advocates for the training of girls. He says that the object is not to make housewives or housekeepers, but to develop a girl normally. The object of education cannot be ignored, and the question is one that Dr. Stevenson has also very ably alluded to. If the object of schooling a girl is to make out of her in after years a competitor to man, it necessarily follows that her training, to a great extent, must be the same as that of the boy who is to become her rival. She must learn the same things and must meet him in competition, and consequently such a system of training as is advocated by Dr. Holmes would not answer, and that, I suspect, is the reason that the present system of instruction is upheld by Dr. Stevenson. It seems to me the object of schooling for the boy and the girl is entirely different, and that our schools, as they are now constituted, are going on the false principle that the training of both should be to the same end. It has ignored the problems of puberty by overlooking the physical

and mental differences of the sexes. This has already led to fierce competition between the sexes, which is ruinous to families and will be to the female members of the race. So I believe I should be justified in accepting the plan of training that is proposed by Dr. Holmes, not only because it develops the girl normally, but because it fits her for what she should become—not the competitor of man, but his coworker in her own proper field.

Dr. FRANCES DICKINSON: I remember that one of the first persons to whom I fitted glasses was a child twelve years old, who wore them for three years, and continued her studies at a public school just the same. She laid the glasses aside, not feeling the need of them through private school and college, until assigned to microscopical work several hours a day. I have had a number of such cases for whom I have fitted glasses between the ages of twelve and sixteen, where they have laid the glasses aside after wearing them for two years, both in girls and boys, showing conclusively that the ciliary muscle will do its work before and after puberty, and the children will continue their work just the same as before, in school or out of school. We have forgotten the fact that most of the children are outside of school and work in our factories. These should be considered in order to take a broader view of the subject.

Dr. FRANK A. STAHL: It was a pleasure to listen to Dr. Holmes' paper. His suggestions certainly savor of the original. Viewed from some standards of the up-to-date ethics undoubtedly his views will meet with no little negative criticisms; yet on many sides they will encounter the heartiest of approval. Dr. Holmes conveys the thought that our present type of woman and the present type of the maturing girl present deviations from a more perfect or ideal type of woman characteristic of the previous generation. Hence, he would suggest a change of training, a reversion to what seems to him was peculiar of the earlier generation, a superior training to the present one, and which would encourage the development of a higher or more perfect-typed physical woman, the ultimate object, of course, being the elevation of the coming race. If this is so, and many affirm it, the fact must be due to some serious refraction in (*a*) heredity, (*b*) training, (*c*) environment. That all three, heredity, training, and environment of the general present generation have strikingly changed from that of the parent previous generation is a fact; that these changes have led to a physical detriment to the present generation seems a logical conclusion. How true this is may readily be witnessed in regarding the youth in our grammar and high

schools. Where there should be the color of youth, with bright eyes, red cheeks, certain gentleness of outline, an activity of perception and movement, the expression of healthy physical youth, what is too often the rule? Languidness, with dull eyes, sallow complexions or blanched cheeks, angular proportions, a lassitude of intellect and motion, indicative of tiredness, the so common feeling characteristic of the majority of city school-life; arising from over-exertion and perhaps improper intensity of application at a period where they should have more rest. How different is this picture when we contrast it with the rosy, warm, vigorous, active, healthy physical color of the German youth, as seen in the schools and gymnasia of Germany, where the physical development of the boy and girl are as earnestly sought for as their intellectual growth. And yet, even in these more perfect physical types, it is quite common that within a few years after reaching our shores there is a loss in the physical vigor, the red cheeks, bright eyes, and activity of movement, soon making way for the oft-seen sallow complexion and general lassitude with loss of physical vitality. And this is as true of the proletarian as of his more fortunately situated fellow. The cause is again over-exertion and excessive application, as well as changed conditions in training and environment, thus causing loss to the heredity.

Obstetrically considered, this disregard of proper opportunity to develop in the maturing girl bears its effect when she reaches her ideal state of wife and maternity. Here especially is her lack of proper physical development felt and may be seen in a double expression, first, as witnessed in the greater physical effort to give birth to her offspring, and this is true from the *le plus haute* to the *le plus bas*; second, in the decreased vitality of the offspring, and this is as true of the offspring of the native as of the foreign parent. It is quite the thing for the *fin de siècle* of to-day to consider herself a martyr to conjugal bliss when mother of several children; formerly it was her delight and crown of glory! This is due in the main to this greater physical effort and to her fear of her inability of restoration to her former physical attractiveness.

The question of dietetics is an important one. The schoolboy, and schoolgirl, is crammed with the Alpha Beta of ancient lore, but their present and future welfares, as well as those of their offspring, seems best served in a twenty-to-thirty-minute interval of pie, biscuit, and gum. To working girls I have often suggested that they try to obtain a warm lunch at noon, or at least a cup of warm water or milk with their cold lunches: but they generally reply that they

have not the time or opportunity. A glass of warm water, or warm milk, with a cold lunch will help very materially the digestion of our girls, therefore their better physical development. If the ladies would take this matter up it would save the maturing girl from many complaints during maturity. Perhaps our philanthropic ladies might take up the subject and offer a few salutary suggestions to employers,

I am very glad to have had the opportunity of hearing Dr. Holmes; he is working along such lines that will tend to give us a more perfect physical type of woman. He seems to have an ideal woman in mind. When we come to consider the form of education, it is oftentimes a matter open to serious question whether it is for the purpose of developing an ideal companion for man or otherwise. In obtaining her (intellectual only) education she is apt to lose many of the physical qualities which after awhile tends to make her less attractive in the eyes of him to whom she would be attractive.

So long as Galatea continued the ideal technical statue of Pygmalion's creation she remained without physical power, yet when imbued with warmth and life she moved her world.

Dr. SARAH HACKETT STEVENSON: I wish to make a word of explanation. I do not wish to be understood as opposing Dr. Holmes' kitchen-work. Dr. Holmes and I never disagree. I have approved of his kitchen method. Yesterday I was talking to one of the leading ladies in this city in regard to bringing her influence to bear upon the Board of Education to put kitchens in the public schools. Of course, we cannot put them in all at once, but it is being talked of among the women's clubs. In reply to the last speaker (Dr. Stahl), I will say that there are several noon-day lunches provided by women's clubs in this city for working girls. If they wish to bring their lunches with them they can have warm drinks and a comfortable room in which to rest. The expense is nominal. In some places there are free lunches in operation. I am very sorry if I was misunderstood in regard to the ideal woman. Possibly there should be something done toward educating the ideal man; this would have a direct bearing upon heredity, and upon the percentage of acquired disease in women.

Dr. JOHN T. BINKLEY, JR.: The suggestions that have been made relative to dietetics and the eye-strain which is to be relieved appeal to every one in connection with this subject. We know that headache is relieved by oculists by the fitting of glasses; and if a patient should fall into the hands of the gynecologist he might find evi-

dences of disturbance in the pelvic organs, and we all know what would be the diagnosis if the case should happen to fall into the hands of Dr. Turck. I consider dietetics in this connection the least important of the points that have been mentioned this evening. It appeals to me so, at least. Dr. Turck spoke of the superiority of the female in her examinations, notwithstanding the fact that he appeals for better dietetic privileges and advantages for her. I was much surprised at the statements of Dr. Stevenson after the observations I have made. I have had special opportunities for observation in young ladies' schools, and also in training-schools for nurses. For years I have been taking in school-teachers, or young ladies who have been precocious, as nurses, and the result has been that they were the least fitted to undertake the work of nursing, or any work which would entail physical exertion for a considerable time. Instead of being the best material for this work, they have given out first. I recall several instances among school-teachers who had undertaken nursing and gave it up.

I think less stress has been placed on environment, this evening, than anything else. Environment is one of the essential factors to be considered in the development of both sexes, but especially the young woman, and particularly those in the higher walks of life. I want to revert a moment to the matter of diet. My observation has been that in the better or wealthier classes the diet is carefully looked after and regulated. The children are not allowed to have anything for an evening meal which is not easily digested and carefully prepared, and the observation of the mothers of these children is very much superior to that of parents of the poorer classes. In these well-to-do families we find less development of the special organs under consideration; while in the poorer classes we find a better development.

Dr. Holmes' paper is to be commended, and I desire to compliment him, as I think the method he has outlined is as nearly ideal as it can be. He does not stop the education of the child in a literal sense; he simply prescribes a cessation of hostilities for two or three years, and diverts the energies into other channels. It is an excellent idea, to my mind. The social demands upon women of the present time are so great that they are too busy to devote the proper attention and consideration to their daughters, hence bad results follow.

Dr. HENRY P. NEWMAN: We are under obligations to all three of the gentlemen for their able presentation of this subject. I had hoped to have other members here to present the gynæcological and

obstetrical aspects of the subject which are so extremely important. These have not been gone into as thoroughly as I wish they might. The conditions which we, as gynæcologists, meet with, are appalling in that direction. They can, and should be, corrected, and will be corrected as women and the general public become better educated. We do not wish to suppress education along this line, but expect to extend it, and thereby eliminate those elements that should be eliminated, and preserve our race.

Dr. BAYARD HOLMES (closing the discussion): I endeavored in the first part of my paper simply to call attention to what should be done to make schools of to-day correspond with the requirements of the physical growth of our girls. I have nothing to say in regard to the physical growth of the boy. In assuming that the girl should at this particular age—eleven or twelve—devote her physical activities to certain lines of work, which are known under the head of domestic arts, of which cooking is the simplest, and perhaps weaving and decorating the most complex, I do not want to be understood as saying that this cooking was in any sense preparing the girl for household cooking as a servant or housekeeper, but that it was done for her physical, mental, and moral development. In other words, it is an effort to realize the adage, which has been a sort of war-cry among a number of educators, that education is not a preparation for life, but it is life; that the educator should take no thought for to-morrow, but take thought for to-day, and for that day only.

In regard to the point brought out by Dr. Bacon, that the education of woman is a preparation for competition with man, my idea is that the man and the woman must each be economical and be perfectly independent of one another; that a woman ought to stand upon her own feet, depend upon her own exertions and her own pocket-book, and manage the affairs of her life without submitting to a man.

In regard to the necessities of this particularly critical time, I would like to illustrate the subject by reporting two cases. One of them was my own son, who had a thorax measurement of twenty-six inches. He fell down in the Fair-grounds from actual physical exhaustion, when he was between thirteen and fourteen years old, and was sick for quite a long time. I treated the boy in this way: I took him out of school and I sent him, as soon as he had recovered from his strain, to a place of high altitude. At the end of six months he came back not only tanned, and tough, and strong, but he measured thirty-four inches around the thorax, and has kept growing ever

since. He has now got powerful lungs, which seems to be the next best thing.

The next case was a girl that I had treated. She was not particularly bright until she began to show that she was entering the stage of puberty. Her mother said, "What shall we do with her?" I told her that the child should be taken out of school and remain out until she became a woman. Then she could return to school again. I told her also that if possible she should send her away from the excitement, noise, bustle, and acquaintances. She was kept out of school for two years, and finally went to work at least six months before she was ready to do so. The result was that she is wearing glasses, although she is strong and well in most particulars. In spite of the bad teachers she had had, she has been able to take first prizes in story-writing and in poem-writing. She has written music which has been sung on the stage in this city, at the Auditorium and elsewhere, and has acquitted herself in every way as a girl of genius. She has that originality or spontaneity of mind which distinguishes her as a genius, or at least as a highly cultured individual from the common herd of us.

Dr. KROHN (closing the discussion): I have nothing to add except to say that it is only in recent years that we have begun to seek to understand clearly what the child is at any age of its career. Before that time educators were satisfied in discussing the object and aim of education. The American people are interested in education, and we are universally agreed that the object and aim of the American school are, and ever should be, the development of the best type of manhood and womanhood; the best citizen physically, mentally, and morally. And so there is no longer any need or necessity of discussing the object and aim of education. We find that all of the quibbling in our educational needs about methods largely grow out of a misunderstanding of terms. When we come to a final analysis we are agreed as to the methods of education, but we have not, until very recently, sought to understand the raw material—the child—that knocks at the school-room at six years of age and seeks to be developed into this high type of citizenship which we place at the goal of our educational system.

Modern child-study, if it has accomplished anything, has called attention of teachers and parents to good citizens; to the necessity of making a child's mind an open page in order that we might know what sort of food, mentally, is needed for the best mental development.

We have had under discussion this evening one of the items that we are forced to consider among a large group of others, and as we raise our heads a little higher and look over the entire field, and extend the horizon of our view, as becomes necessary, we have problem after problem that insists upon solution, and the problem that is forced upon us at every turn is that we must know the child in order to do the most for him—in order to develop a complete type of citizenship as the object and aim of our educational system.

Official Transactions.

C. S. BACON, *Editor of Society.*

TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

Stated Meeting, April 7, 1898.

The President, CHARLES P. NOBLE, M.D., in the Chair.*Clinical Phenomena Relating to the Nervous System in Connection with Diseases of the Female Generative Organs.*

BY A. F. CURRIER, M.D., New York.

(See page 20.)

DISCUSSION.

Dr. C. K. MILLS: The reader of the paper has not much discussed and advocated operative procedure in all cases that would naturally come up for consideration in a discussion of this sort. The views which I am inclined to take, and which are somewhat conservative in reference to the frequency and character of the operations which are performed in many of these cases, are held with the feeling that comes as the result of experience and not with the tendency to unduly criticize my gynæcological and surgical friends. It is now more than ten or twelve years since I began to endorse and to take part, in one way or another, in operations upon the brain or upon the cranium, in many cases where I would now fail to recommend or endorse such operations. In not a few instances I have been more or less responsible for operations which have not turned out in all respects successful.

In the first place, however, in accord with the line of discussion which would be naturally opened by the paper, I would say a word about the relations between the genital and sexual organs, and different parts of the nervous system. While undoubtedly these relations are as demonstrated here this evening, but I think sometimes that a first serious mistake is made in laying too much importance upon this question of sexual and general reflexes. While in fact very largely the nervous processes of the human body are in a more or less immediate or in a remote manner of a reflex character, we carry too far the idea of correcting the disturbances by correcting the reflex irritation. One of the sources of trouble with gynæcologists and surgeons is that which is most natural from the fact of

specialism, namely, that they are not as fully acquainted as they should be with the conditions of the nervous system itself. They cannot be expected to be neurologists; if they were, our own vocation might be interfered with somewhat. Nor, still less, can we expect them to be psychologists; but a little psychology, such as would serve the purpose of plain doctors, and some little neurology, would often be of great value. I speak of this particularly in connection with some of the conditions which are referred to the pelvic organs, and which, judging from my own experience, are often centrally initiated—a point upon which, perhaps, sufficient stress was not laid in the paper this evening. In regard to pain, one of the matters of chief discussion in the paper read here this evening, too little attention is paid to the fact that pain which is referred to the pelvic organs, or to organs in any part of the body, is, after all, of cerebral, or at least of central, origin. It is only necessary to refer here to the well-known facts in regard to even hallucination of pain, to emphasize this point.

In regard to the question of insanity after operation, or in connection with diseases of the pelvic organs, I would incline, with some additions, to give the same varieties of insanity that have been given here this evening. Undoubtedly we do have cases that may be regarded as purely traumatic, not being able to explain clearly, perhaps, what we mean by "traumatic," except in connection with the idea of general shock to the nervous system. We have other cases which are undoubtedly toxic, and then we have cases which are properly referred to predisposition. To these might be added cases which are actually insane—the insanity not being recognized—at the time the operations are performed. From the standpoint of the alienist and neurologist we have not a few cases of this sort. In another discussion of a similar paper I called attention to the not infrequent existence of a "monomania" of pain, as it might be called. I have, in a considerable number of instances, seen operations of a major character performed for conditions of this sort. Within a month I have seen a patient who, during as many months, had four or five operations—one upon the rectum, another for appendicitis, another for the removal of one ovary, and at least one other operation of some sort upon the uterus itself. This patient, shortly after the last operation, was in a mental condition which required her to be sent to an insane asylum under rather sensational circumstances. This woman is representative of a class of patients who are actually insane, or nearly so, without the mental derange-

ment being recognized when the operations are performed. In a case of this kind it is a practical point to obtain the personal history and the family history of the patients. This should be closely inquired into, and the gynæcologist should have a neurologist's opinion in regard to mental disorders to assist him in making a correct diagnosis before operating.

One other word in connection with operative procedures in these cases. It is sometimes asserted as an excuse for operative procedures that insanity in some form develops in an equal number of cases from operations of other sort than those upon the pelvic organs, or that it might result in any case without regard to these operations. The important point is that this very fact should be more thoroughly inquired into.

The reader of the paper has referred to the fact that when the organs are diseased and we have nervous or mental symptoms at the time concomitant with these diseases, if we are convinced that we have diseased organs to deal with, these should be removed. I doubt whether in all cases this is a correct position to take. Certainly they should not be removed if disease is not present, except under very special circumstances, but even when it is present and when it is demonstrable, it is certainly not always good practice to remove such organs for nervous or mental symptoms because these organs are diseased.

More than this must be considered. In some cases I unhesitatingly advise operation when called into consultation by gynæcologists or surgeons, as in the case of a woman who, during the menstrual period, had mental disturbance verging at times upon insanity, whose nervous system was constantly below par, and in whose case the determining factor seemed to be the condition of extreme pain and distress at the menstrual epoch.

In regard to the existence of symptoms or the occurrence of symptoms as a result of other causes than the operation, although the symptoms come on after the operation, I have had a number of experiences. Recently I saw in the Philadelphia Hospital a patient who, after taking ether for some surgical operation, became, not insane, but developed the stigmata of grave hysteria, showing the segmental anesthesia, and some other phenomena of this disorder. We have these grave hysterical phenomena in a large number of cases without any operation whatever. A good rule to adopt in most cases, at least, is not to operate in cases with clearly defined symptoms of a grave hysteria in a woman, even though there be

some, if not very marked, disease of pelvic organs. In these cases I always advise against operation, unless there is a disease of a very serious character and one which is clearly demonstrable, because my experience shows they generally turn out badly. There is a form of mental disorder which is the result of a moody concentration of the woman in regard to the loss of her generative organs.

It would, perhaps, be well to direct a little more attention to the actual organic neural conditions in the pelvis in many cases, instead of exclusively considering the ovaries and uterus. Some years since, at a meeting of the College of Physicians, I called attention to the frequent existence of forms of sacral and lumbar neuritis in women, and also in men, for that matter, and to the necessity of treating these patients by rest and local measures, non-operative, before considering for a moment, in the case of women, operation upon the pelvic organs.

Dr. J. MADISON TAYLOR: Preoperative and post-operative conditions, in my convictions, are often rather serious, and if the neurologists, instead of being critical of, or antagonistic to, the gynæcologists, and be ready to cooperate; if these, working in two different lines, would call each other more promptly in consultation during the preoperative conditions, there would be less of the after-operative disturbances. They look from different standpoints. In my work in neurology I have seen gynæcologists called in a great deal by neurologists, and it has been a matter of surprise to me that relatively so few neurologists are called in by gynæcologists until after the operative conditions arise which are spoken of, or, as Dr. Mills has said, where the neurologist is called in to give an opinion merely as to whether there should or should not be an operation performed. I do not think this is sufficient; there is much more to be done. We do not call one another in consultation, as a rule, at the right time. I have enjoyed in certain instances to have an opportunity of seeing a number of cases, with gynæcological colleagues, several weeks before the operation was performed, and they have told me that I was able to help them some little in elucidating certain points of importance.

Then comes the question of post-operative state. What does cure mean? These cases develop troublesome conditions and come into our hands. They are cured as far as the gynæcologist is concerned, but not cured, by any manner of means, from a neurological standpoint, of a series of conditions which make that person an inefficient member of society and sometimes a pest to her family.

These psychoses, these disturbances of conscienceness, come our way not a little. The gynæcologist naturally thinks by these reflex relations, which have been admirably portrayed by the orator, the condition of the patient is explained. The neurologist has given up more and more attaching significance to the reflex neuroses.

Neurologists do not accept very much significance from the so-called reflex irritation from this point and from that, and while it is true that these various centers anastomose and connect here and there, so do all the centers from the teeth down to the toes, and there is intimate connection all the way through, and it does not happen that irritation of one organ involves systematic irritation of other organs, except in so far as, clinically, we are able to know that certain results happen more frequently than others. It does not transpire because connections here and there exist that results in one locality will produce certain symptoms in other localities, except in certain well-defined clinical pictures we have now and then. The psychoses and neuroses that come to neurologists are almost equal in importance with the original state.

Take the subject of the eye. It is well known that the oculist is able to cure by operation or by glassing; then, after while, these conditions come back just the same. Then are needed often a long series of procedures to bring about a condition not so bad as before, then subsequent operation or reglassing of the eye, and then, again, a fourth procedure, isolation, rest, etc. Very many times the operation is a success, and then things transpire which require a good deal more of attention and that sometimes fall our way. As to the question of psychotherapy there is a constant discussion as to whether psychotherapy is mere charlatanery or really a therapeutic measure. Wilkin says, in the *New York Medical Journal*, March 26, 1898, he believes in it firmly. It is not a question of whether we believe or not; so few men have taken the trouble to go into the question of hypnotic suggestion from a genuinely honest standpoint of inquiry that I do not wonder at the general public looking at it askance, but that a certain amount of benefit can be accomplished by psychotherapy, which can be done in no other way, can be proven by experience. I have become interested in the subject and beg my friends to send me some of their toughest cases, and I have been allowed to do what I could on these puzzling remnants. Dr. Talley sent me one such case with the confident assertion that nothing could be done. I don't suppose very much can be done for this woman, but a little can be accomplished to make her a more endurable mem-

ber of society, and that I have succeeded in doing. For six or eight years she never smiled—was a nuisance to the family from her own admission. By direct suggestion, as well as hypnotic suggestion, I have gotten her so that she willingly comes to my office when she has come to the end of her supply of nerve-force, and I reinforce into her some wholesome views and energies. The retention of her supply of nerve-force is lengthening, and I hypnotize her and she immediately goes into a comfortable state of sweet sleep, and goes away and acts upon the suggestion I have given her for quite a space of time. Hypnotizing can be done by some individuals and cannot be done so well by others. Possibly it is because some take more pains in doing it; possibly some people are better able to humbug than others. As to whether hypnotism can do any harm in the way of moral perversion, I do not altogether know, but I do believe that it can. There are women who have a natural tendency to go to the bad, and they will go sooner or later, in more or less degree. There are others who have a tendency to keep to the good, and they go to the good. Per contra, if you confine your attention to a certain doubtful class, and they don't know whether they will go up or down, if you endeavor to reinforce their wholesome impulses, I believe you can accomplish a great deal; as to whether you can do this better by hypnotism rather than by good council I am not sure, but by hypnotism you can succeed in getting back of some door and reach some vulnerable point, to make an impression upon that sensorium or consciousness which you cannot do by straightforward suggestion, I know to be the case. Whereas, many people who are of moderate intelligence cannot take this advice directly, it must be as Moody said, in reference to being converted: "You must not only say, 'I believe on the Lord,' is not enough, but they must say it with an air of conviction and with the honesty of acceptance which is only gotten at by an attitude of faith and cooperative effort." If one can control that attitude of consciousness by hypnotic art, then it is a useful measure. I think in this country we cannot do what can be done abroad, because I do not think our people are so easily affected by it as in Europe—about Nancy, for instance, and Paris—but I believe for those individuals who are in a good deal of disturbance, mentally, you can influence them for good, and I do not believe these same individuals could be influenced by harmful direct suggestions and associations under hypnotism more than they are likely to be from hypnotism.

Dr. J. M. BALDY: In one particular I differ radically with Dr.

Currier, *viz.*: the subject brought up by both of our neurological friends. They assume for the neurologists all the virtues in this respect, but with a little looking about they will find some, at least, of the gynæcologists not far behind. In the intimate connection, as pointed out by Dr. Currier, of the nervous system of the vagina, uterus, and ovaries with the lungs, the stomach, and other organs, if irritation will cause reflex symptoms of these organs, why will not the converse be true, that disease of these organs (stomach, lungs, liver, kidneys, etc.) will cause reflex symptoms in the uterus or pelvis? I have long since, from a practical experience, been coming more and more firmly to this opinion: if one set of organs will cause reflexes, so will the others. This idea of reflexes from the pelvic organs is something we have got to unlearn. When we face the fact that the gravest kinds of disease, such as extra-uterine pregnancy, fibroid tumors, and cancer, give few or no neurotic symptoms, it seems to me we are ignoring a valuable hint on the subject. When we attempt to attribute all the reflex symptoms which are present in a given patient, who has a lacerated cervix or perineum, to a very small amount of scar-tissue, we are going very wide of the mark and are usually ignoring the more important general conditions which are producing the trouble.

DR. A. F. CURRIER: I do not think it necessarily follows, from the remarks which have been made, that the theory of reflex disturbance is incorrect. At the same time I am perfectly willing to concede I did not mean to state that I accepted entirely the idea that reflex disturbance in these organs were entirely due to irritation in the genital organs. The fact remains that clinical experience has proven that we often find these conditions correlated. I think the gynæcologist has observed the fact more frequently than the neurologist, because his attention is, perhaps more frequently called to the correlation.

Now, if the symptoms in remote organs are relieved simultaneously, or nearly so, with the relief of symptoms in the genital organs, it is hardly fair to say *coincidence* when the fact is observed repeatedly. A denial places the burden of proof upon those who deny, and I am not aware that the evidence has been brought forward.

I agree most thoroughly with the neurologists that probably too many operations have been done upon women merely for the relief of nervous disease. Battey, as you all know, was an advocate of removal of the ovaries for such disease. Your own Goodell, in the

early part of his experience, was also an advocate, though he subsequently withdrew his approval. Most gynæcologists of experience and observation are now agreed that we are seldom warranted in removing important organs from the body *merely* for the cure of nervous disease, whether real or simulated. In connection with this matter is a report, to be published with my paper, of two distinguished Italian alienists, based on operations upon women who were either the subjects of hysteria or allied conditions, or who were mentally unsound, their conclusions, from 115 operations performed in Italian hospitals and asylums, being that the results did not usually justify such operations.

In regard to the question which was raised by Dr. Mills, which was a very important one, of operations upon those who were insane, I did not introduce the subject into the paper, although it naturally came under consideration when the paper was in the course of preparation, because it seemed to me it would unjustifiably prolong it. My intention, more particularly, was to consider those apparently allied conditions which obtain prior to the treatment by the gynæcologist, whether that treatment be by local applications, or by operations upon organs, or what not. I may say, however, that I agree with the position of Rohé, who has probably had more experience in the matter than any other alienist in this country, since he combines the gynæcologist and the neurologist, that if an insane woman has gross lesions of her genital organs she has as much right to be treated for them and relieved of them as the woman who is not insane. The position of Dr. Mills may be correct, that a lesion of the genital organs is not necessarily a cause for operation, but I failed to hear him state the limit of lesion before he would consider an operation justifiable.

The preoperative consideration of cases, with more careful and thorough analysis, as suggested by Dr. Taylor, is to be commended. If cases were studied from more than one standpoint before determining the line of treatment, it would probably be better for the patient. I am very sure that gynæcologists are not the only ones who sin in this particular. I presume there is not a gynæcologist of experience who has not been consulted by those who have been to one neurologist after another, and have finally come to him for relief. All this is simply an evidence that we have not reached the bottom and that we still have something to learn from both sides of the question.

Ureteral Anastomosis.

BY HOWARD A. KELLY, M.D.

(See page 725, June No., 1898.)

DISCUSSION.

Dr. J. M. BALDY: One of the practical points of the whole question of urethral instrumentation has been an improvement of general abdominal technic in regard to operations. We all of us have had injuries to the ureter, and all of us have seen probably more that came from the hands of other operators. The difficult ones are not those which occur at the time of operation—these are comparatively simple. The day is past in which the removal of the kidney is longer indicated for injury of the ureter. The methods of repair have called our attention to the methods of avoidance. Intraligamentary tumors, either solid of uterus, or cystic of ovaries, have been responsible for a large proportion of these ureteral injuries. If both sides have to be sacrificed the procedure is exceedingly simple. Dr. Kelly called attention to this procedure for solid growths; it is just as simple, easy, and as feasible in intraligamentous cystic growth.

As to the class of cases in which ureteral injuries occur, Dr. Kelly included in his list several instances which did not seem to me to belong to the legitimate class. We may have an injury to the ureters in extra-uterine pregnancies of three or four months, but that such an injury to the ureter should occur is an accident in surgery and not inherent to this operation. The same may be said in regard to Porro's operation.

The repair is very simple, if one has a little mechanical ingenuity, where the injury occurs in our own hands, and occurs primarily. It becomes exceedingly serious if the patient is allowed to go to bed and the ends of the organs are involved in cicatricial tissues. Sometimes in some cases it has rendered future operations futile. Possibly it would not have been so if operated on at once. The plan of shifting one ureter across to the other, provided the ureter is long enough to carry to the opposite side, is a good one. At a certain point this is feasible, but if the ureter is cut above the brim of the pelvis—cut too high up—I conceive a case could be extremely difficult to get across to the opposite ureter. The end-to-end anastomosis, the question of bladder implantation, the question of lateral anastomosis is one purely to be studied by the case as it occurs at

the time. There is no rule for the surgeon to follow in these cases, except that of common sense, as to the best and most feasible plan. In the majority of cases bladder-implantation is most feasible. It is a practical fact that in all reported cases in which any comment was made as to the feasibility of bladder-implantation, it was clear that anastomosis could not have been performed on account of the condition of the two ends. As a matter of fact, most of these injuries are in the posterior pelvis and at the lower portion of the posterior pelvis. As a rule, when adherent or infiltrated, as in cases of cancer, it leaves the ureter so impeded as to make it impossible to get at it to make an end-to-end attachment. Sometimes the ends of the ureter cannot be brought together, except by dissecting the bladder and bringing bladder to ureter rather than ureter to bladder.

Some years ago I resorted to pretty much this same method of procedure. I brought the bladder and ureter together and made implantation when it became very evident that the union would not hold. I simply took my knife, cut the ligaments attaching the bladder to the pelvis, and dropped it back into the pelvis sufficient to take all tension off the stitches. Dr. Kelly has explained very plainly the various procedures and principles on which these conditions must be met if success is to be obtained when the fistula occurs in the vagina, and no rule can be applied to any given class of cases. The surgeon must need apply principles as he can apply them at the time. The principles, as laid down by Dr. Kelly, are so plain and correct that it is unnecessary to make any further comment on them.

Dr. FULLERTON: My own experience in ureterostomy is limited to two cases. The first of these was performed during an operation for the removal of a large intraligamentary cyst, complicated by dense adhesions and general involvement of all the pelvic organs in malignant disease. Dr. Noble assisted me with the operation and and it is referred to by Dr. Kelly in his recently issued work on operative gynecology. The cyst was successfully peeled out of the broad ligament, but in the separation of adhesions the left ureter was divided. As the patient was in no condition for further operative procedure at the time, I acted upon Dr. Noble's suggestion and fastened the distal extremity of the divided ureter into the abdominal wound. A long, flexible, ureteral catheter was carried into the ureter in order that the urine voided from it might be carried to a safe distance from the wound. As there was no discharge from the catheter at any time, it was concluded that the kidney had been atrophied by pressure. The patient survived the operation four

months, when she succumbed to the progress of the malignant disease. The second case—one reported by myself to this Society in October last—was a ureterocystotomy, necessitated by the accidental division of a ureter during the enucleation of densely adherent pustules and ovarian abscesses. The ureter was a double ureter and was severed low enough down in the pelvis to make it possible to implant its distal extremity in the upper part of the bladder.

The practice of catheterizing the ureters before operation in order to avoid wounding them, as recommended by Dr. Kelly, does not seem to me altogether feasible. The maneuver is a difficult one at the best in uncomplicated conditions, and when we have large tumors which, in their development, have rendered the ureters more tortuous, it seems somewhat of a risk to catheterize. I have hesitated to prolong any operative procedure of my own by a resort to this method. In two cases occurring in the service of Dr. Roberts at the Woman's Hospital, I was enabled to discover the cause of severe attacks of renal pain by catheterization of the ureters, leading subsequently to successful operative procedures. In one of these, obstruction of the ureter was found to be due to a large, impacted calculus; in the other, to an atrophied kidney, with perinephritic adhesions and probably kinking of the ureter. In some other cases of tuberculous kidney and pyuria I have found ureteral catheterization an aid to diagnosis.

Dr. Kelly's suggestion of freeing the bladder from its attachments in order to make it meet a divided ureter appears to me a valuable one.

Dr. C. P. NOBLE: What is to be done with the abdominal vessel as to the relation of the ureter when the ureter is cut off high up? It seems a practical difficulty in carrying out this operation, that the ureter would be dragged across the large abdominal vessels.

Official Transactions.

FRANK W. TALLEY, *Secretary.*

ABSTRACTS.*

This Department is in Charge of the Following Staff of Sub-Editors:

DR. T. W. CLEVELAND, DR. G. H. MALLET, DR. A. D. CHAFFEE,
AND DR. W. T. KLEIN.

SOCIETY PROCEEDINGS IN BRIEF.

Transactions of the Gynæcological Society of Dresden: Session of Dec. 14, 1897.

J. SCHRAMM: *Foreign Bodies in the Peritoneal Cavity.*

Since the opening of the peritoneal cavity has become a common operative procedure, instances in which sponges, gauze-pads, and small instruments have been left behind by unfortunate oversight have increased in numbers, though in all probability the reported cases thereof form but a small percentage of the accidents that really occur. Wilson has published a series of thirty cases. He mentions particularly a case of Atlee's, one of ovariectomy, in which a sponge had been left in the peritoneal cavity. Despite reopening of the cavity the patient died on the fifth day. G. Braun was equally unfortunate, his patient dying after twenty-four hours. Nussbaum missed a pair of forceps after a long and tedious operation. His patient left the hospital apparently well, but after the lapse of nine months she became subject to violent abdominal pains that ended with the expulsion of the instrument per rectum. Salin allowed a sterilized gauze-pad to remain in a case of ovariectomy. A year later an abscess formed at the lower end of the abdominal wound upon the spontaneous opening of which a quantity of offensive pus was expelled. Dilatation of the fistulous opening facilitated the extraction of the offending gauze-pad, which was followed on the next day by the flow of no inconsiderable quantity of the contents of the small intestine. This had ceased at the time of the report. A certain French surgeon witnessed the spontaneous passage per rectum of a gauze compress, 26 cm. long, eight months after a laparotomy. In another case of his, an iodoform-gauze strip 35 cm. long was extracted from the rectum of a patient that had been operated for salpingitis. As the symptoms did not abate, the uterus was extirpated. A third operation, in this instance a laparotomy, was required. During the attempt at releasing the adhesions of several coils of small intestines, this was perforated. Through the opening the remainder of the gauze strip was extracted. The patient made a good recovery.

STICKLER's experiments upon the influence of certain substances upon the peritoneum are quite interesting. He introduced laudable pus, sweat, urine, and feces into the peritoneal cavity of guinea-pigs, and in every instance the animals

* All Abstracts are made *directly* from original articles in the language in which they were first published.—EDITOR.

survived without elevation of temperature or other symptoms of malaise. He also introduced needles into the peritoneal cavity of the animals without causing any disturbance. They were subsequently killed, and the needles were found to be encapsulated by a fibrinous exudate.

From these experiments it appears that the normal peritoneum does not react so readily to these sources of irritation, provided no streptococci be introduced at the same time. The presence of these micro-organisms is essential for the production of septic inflammation of the human peritoneum, whilst the benign non-infectious peritonitis of Bumm is produced by mechanical, chemical, or thermal irritation alone.

The author then cites a case that occurred in his own practice. He attempted to remove a double pyosalpinx of gonorrhœal origin through an incision in the anterior vaginal wall. Finding it impossible to enucleate the tumors he performed an abdominal celiotomy, extirpating the uterus and removing the tubes piecemeal. During the operation a gauze sponge, imperfectly fastened to the sponge-holder, became lost in the peritoneal cavity and could not be recovered. The iodoform-gauze packing was allowed to protrude through the lower end of the abdominal wound in the hope that the expulsion of the sponge would thus be facilitated. The following day the clamps and gauze packing were removed without, however, disclosing the missing sponge. The fever that the patient had had before the operation soon subsided, and with the exception of a slight abdominal tenderness that lasted for a few days her convalescence was rapid and uneventful. Before her discharge, two months after the operation, he found a small insensitive tumor behind the bladder formed by the encapsulated sponge which he expects will be expelled sooner or later.

J. SCHRAMM demonstrated the specimen of another case of double pyosalpinx.

Discussion: LEOPOLD cited a case in which a drainage-tube was left behind during laparotomy; this the patient lost subsequently while dancing. In another case a sponge was forgotten and the patient died. In a third, a gauze-pad left in the cul-de-sac was the cause of the lethal termination. Among his own cases he was once compelled to reopen the abdomen to recover a missing sponge, which he then found under the right lobe of the liver.

BODE related an instance in which he had failed to fasten the drainage-tube. This became lost, and necessitated a second laparotomy for its recovery. He called attention to the case of V. Winkel in which an *ascaris lumbricoides* was found as a foreign body in Douglas' cul-de-sac. In another case a clamp was lost.

OSTERLOH reported that in the last-mentioned case the clamp escaped by supuration through the right iliac fossa. He himself had allowed the head of a three-months' fetus to remain behind without detriment to the patient.

BROSIN cited a case in which the abdominal wound failed to heal until, after six months, a gauze compress was spontaneously expelled.

KLEIN related among other cases, that of the American surgeon Cushing in which he lost his ring, but was happily enabled to excise the same from the cul-de-sac several years later. He stated that the following method of procedure was employed at the Gynæcological Clinic of the Munich University. Only stick-sponges are employed, the sponges being composed of cotton enveloped in mulle and fastened to sponge-holders, the free end of which is provided with a hook. Instead of pads, soft towels are employed such that can be distinguished from those employed elsewhere in the operation. They are removed from the sterilizer

as required and thus used warm.—Abstracted from the *Centrabl. f. Gyn.*, May 7, 1898.

Transactions of the Obstetrical, Gynecological and Pædiatric Society of Bordeaux, April 25, 1898.

MM. DEMONS, BOURSIER, and LUGEOL call attention to the fact that in a woman who complains of abdominal pain the possibility of the existence of an ovarian cyst must not be lost sight of, and relate several cases in which such tumors have been mistaken for renal and biliary colic.

M. BOURSIER: *Enormous Fibroid Tumor of the Uterus Removed by Abdominal Hysterectomy.*

M. BOURSIER presented a large fibroid removed from a woman forty years of age. Had noticed the swelling for seven years. Neither menorrhagia nor metrorrhagia. No pain, excepting during the last three months, at a point above the right iliac fossa. Abdomen was about the size of a full-term pregnancy. No bladder disturbances. Tumor soft, cervix normally situated; movements of tumor not transmitted to cervix. Anterior surface bosselated. Uterine cavity 8 cm. per sound. Diagnosis between ovarian cyst and fibroid.

Under anesthesia the uterine cavity was again measured; 12 cm. It was a fibroid. At the painful point the tumor was adherent to the abdominal wall. The removal was difficult on account of the weight of the tumor. The suspensory apparatus of Reverdin could not be introduced into the operating-room, and the tumor was too heavy to be conveniently supported by an assistant. It was thus removed in two sittings. At the first, the tubo-ovarian vessels were ligated and the tumor divided above an elastic ligature. The complete enucleation of the tumor was accomplished at the second sitting. This method of removal in two sections is sometimes attended with danger. In another case, though the ligature was applied quite high, he incised the bladder. Despite immediate suture the patient died in forty-eight hours, not of peritonitis, but from operative shock.

Discussion: M. DEMONS. It was unfortunate that Reverdin's apparatus could not be applied; however, the cork-screw of Delagenière gives good results.

M. BOURSIER: I employed it, but the tumor was too heavy to be properly held by an assistant.

M. DEMONS: M. Richelot avoids wounding the bladder by making the peritoneum glide upon the uterus, and dividing it at the point where it ceases to do so.

M. BOURSIER: I have employed that method, but without success; the bladder rose very high in front of the uterus, and the peritoneum passed directly from the pubes to the tumor.

M. CHALEIX: *Metrorrhagia in Old Women.*

In a former session several of us had attributed these losses to a senile endometritis, others to neoplastic alteration of the uterine mucose. In support of the first of these views I had reported the case of a woman fifty-five years old who was subject, ten years after the menopause, to losses of blood. The cervix was healthy, and the endometrium free from fungosities. The hemorrhages yielded to intra-uterine application of creosoted glycerine, followed by very hot irrigations, and did not recur for two years. When seen at the expiration of three years she

suffered severely from hemorrhages, and presented a large globular tumor which was manifestly a cancer of the uterus. She soon succumbed to the disease. In this case the neoplasm had developed upon a simple senile endometritis. A similar history was presented by a second case. Thus it appears that metrorrhagias in old women have a great prognosis.

Discussion: M. DEMONS: I believe that the beginning of these metrorrhagias might be attributed to adenomata of the glands of the mucosa, which were later the starting-point of the malignant degeneration.

M. BOURSIER: I do not believe that there was in these patients a transformation of the endometritis into cancer; it is not the usual course of malignant tumors even of the body of the uterus.

M. DEMONS: *Cylindrical Epithelioma of the Mucosa of the Body of the Uterus.*

The patient, sixty years old, had never suffered from diseases of the uterus or appendages. In 1894, following an attack of influenza that had chiefly involved the ganglionic nervous system, losses of blood ensued for the first time after the menopause which had set in nine years before. These losses gradually increased in frequency and intensity. No leucorrhea. In September, 1896, they became irritable hemorrhages. Examination by palpation and the speculum revealed nothing abnormal. A curettage undertaken in December, 1896, brought away a considerable quantity of fungosities, but the hemorrhages reappeared in two months. The introduction of nitrate-of-silver sticks seemed to cause slight diminution of the hemorrhage, but the patient continued to suffer.

In October, 1897, uterus smooth, rising to the pubes, no adhesions to neighboring structures but giving the sensation of fluctuation. Puncture of the tumor through the uterine orifice led to the escape of a half liter of opaque viscid chocolate-colored liquid devoid of odor. Uterine lavage. Size of uterus became normal, but hemorrhages continued. In February, 1898, total vaginal hysterectomy. Microscopic examination revealed cylindrical epithelioma of the body of uterus; adnexa healthy. Patient made a good recovery.—Abstracted from the *Journal de Méd. de Bordeaux*, May 8, 1898.

OBSTETRICS.

UNITED STATES.

The Influence of Somatose upon the Secretion of Breast-Milk.

DR. RICHARD DREWS (*Practical Med.*, New York, March, 1898) says that all authors agree that the mother's milk is the best nourishment for a child, but unfortunately, the number of mothers unable from various causes to nurse their own children, is very large. Still larger is the number of mothers who are unable to nurse their children to the proper time for weaning, that is, until the time of transition to a mixed diet. Since olden time various means have been recommended for establishing and maintaining a free flow of milk, such as milk, gruels, cocoa, malt beverages, etc. But none of these have proved satisfactory. The long-felt want is filled by Somatose. In 1896 the author reported twenty-five cases in which the administration of teaspoonful doses of Somatose four times daily in milk, soups, etc., either increased an inadequate flow of milk, or prevented the threatened arrest of lactation, thus prolonging the period of lactation considerably. And this increase is due to the direct influence of Somatose upon the mammary glands, not to improvement in general health and appetite, as is proved by the rapid effect following its administration. Since 1896 more than one hundred cases have come under the writer's personal observation, all of whom were benefited. Wolfe of Philadelphia, and Taube of Madrid, have obtained equally good results. Professor Rokitansky of Gratz has used Somatose in several cases with good results. Dr. Winkle was unable to form a positive opinion as to its value, as the women remained in the clinic but a short time after delivery, but as in certain cases of insufficient lactation it seemed as if the sudden improvement was directly connected with the use of Somatose, he thinks it possible that the immediate influence of Somatose upon the mammary gland cannot be arbitrarily excluded. Dr. Gagliardi-Magliano of Toscana sends interesting observations as to the increase in flow of milk and the improvement in the condition both of the mothers and children following the use of Somatose. Dr. Joseph Lewy of Berlin, editor of *Medico*, has made experiments with the preparation and considers the results so promising that he urges his colleagues to test its efficacy.

Miscarriage at the Third Month with the Ovum Unruptured, but the Fetus Absent.

FRANK S. CLARK (*Cleveland Journal of Med.*, March, 1898) was called to see a patient, a II para, three-months' pregnant. The uterus was retroverted and apparently not larger than a two-months' pregnancy. It was replaced, but efforts to prevent miscarriage failed, and an ovum, nearly covered on top with chorionic villi was delivered. The membranes were transparent and contained about a dram and a half of clear fluid, but no fetus within. It could not have escaped as the sac was intact and contained fluid. The ovum was about the size of a small hen's egg. The fetus must have died at or before the end of the second month, and the circulation of the ovum not being interfered with it was not thrown off until a month later. The fetus had evidently been absorbed. This cannot take

place, according to well-known writers, after the second month, and is of very rare occurrence. The fetus could not have simply liquefied, as in that case the fluid in the sac would have been thick and opaque.

Expulsion of a Mature Fetus with Membranes Intact.

DR. A. F. MEYERS (*Penn. Med. Jour.*, March, 1898) was called hurriedly to a case of labor. On reaching the patient, a II para, he found between her thighs in the bed a mass which proved to be the complete placenta and fetus, the latter in a large ovoid sac unruptured. On rupturing the membranes the escaping water had a cloudy appearance and slightly offensive odor. The child was fully developed, weighing about seven pounds, but had apparently been dead some little time, as the skin peeled readily. The placenta was normal in size, but the maternal surface was unusually dark, and there was some odor. There was no unusual loss of blood and the uterus contracted well. The patient gave a history of a severe fall down stairs a week previous to labor, at which time she felt a severe pain in her abdomen "as if something had given way." This was followed by tenderness and a sensation of weight, with a constant desire to urinate when on her feet. She had not felt any fetal movements since the fall. The labor had lasted only one hour, and the patient recovered rapidly. The placenta must have separated at the time of the fall, causing the child's death. The patient's pelvis was of normal dimensions, and her first labor had been perfectly normal.

Puerperal Gangrene.

MAGNUS A. TATE (*St. Louis Med. & Surg. Jour.*, April, 1898) says that cases of puerperal gangrene are a rarity, and gives the history of a case recently under his own observation, together with five cases recorded by others. The first four cases were taken from Simpson's work on "Obstetrics," and are briefly as follows:

Case I.—A IV para, healthy, with a normal labor, lochial and lacteal secretions normal. On the fourth day the patient had a severe rigor followed by excruciating pain in the left leg and foot, especially in the inner portion of the calf, which was cold and tense, but not swollen. On the forepart of the foot a spot of ecchymosis appeared creeping up to the ankle-joint. The uterus was somewhat enlarged, pulse small and rapid, thirst urgent, tongue coated. By evening the discoloration had reached the calf of the leg, having a wavy margin. Vesication over the spot first invaded began the next day. The patient's mind was wandering. Death occurred three days later.

Case II.—Patient attacked with gangrene of leg and foot on the tenth day after delivery. The limb was amputated at the lower third of the thigh, but no blood followed the knife. Death came the next day. At no time was there much pain.

Case III.—A multipara had fever on the fourth day following the birth of a premature, dead child. Swelling and great pain in the left leg followed by gangrene, which proved fatal in six days.

Case IV.—The patient had a cough for a month before delivery and was somewhat debilitated. Labor was normal and recovery progressing until the tenth day, when pleurisy set in. Three days after her recovery from this she

complained of pain in the heel running to the great toe and ankle-joint. A livid spot appeared on one toe, the temperature of the foot and leg diminished, and there was impaired sensibility. The toes, and at last the foot and ankle became black, a line of demarcation forming two inches above the ankle-joint. Amputation above the knee was performed and recovery was complete, the patient having since borne two children.

Swayne relates a case occurring during the seventh month of pregnancy. After a long journey the disease attacked an area on the upper and inner third of the thigh about as large as a man's hand. Premature labor occurred four days later, followed by an intensification of all the symptoms and death on the third day. There was no injury, wound, or erysipelalous inflammation to account for it.

Dr. Tate's case was a primipara of 25. Family history negative. No history of syphilis. Previous health good. When six-and-a-half-months' pregnant she took cold, became very nervous, and early on the second day noticed edema of the face and feet which increased rapidly. The abdomen became swollen, headache intense. Under the care of her physician the swelling subsided and she improved greatly. Nine days after the first attack she awoke with a violent headache, followed by three terrible convulsions, during which she bit her tongue. Vomited before and after each convulsion. Five days later she was taken to the hospital in Cincinnati. At this time her breathing was so labored that she could not lie down; rest was secured by hypodermics of morphia. The dyspnea soon disappeared and the swelling subsided. On the fifth day after admission she delivered a dead child, the labor being nearly painless. The following day she complained of a sleepy feeling in the left foot with some pain, but these symptoms disappeared until seven days later, when they returned in both feet, and a bluish patch appeared on each ankle, the discoloration spreading rapidly up the legs. The patient left the hospital and Dr. Tate was summoned. The gangrenous condition involved both legs nearly to the knees, having a waving outline, but no distinct line of demarcation. The feet were turned in, were greenish-black, dry and leathery in appearance. They were cold and clammy, with the skin wrinkled. The legs above the knees were warm, but no pulsation of the femoral artery could be detected. The breathing was regular, no heart murmur, patient perfectly rational. The bowels were constipated and urine loaded with albumen. Pain in feet and legs almost unbearable. Eleven days later the patient had fever for the first time, and there was a perceptible odor of dead tissue. The temperature rose for three days, when death occurred. A few hours before death there was marked disintegration of tissue. At no time was there any evidence of a line of demarcation.

Gangrene results from impaired circulation (due to arterial changes or other causes), or the tissues of the body at large may be in an impaired condition, due to long fevers, diabetes, etc. It may follow injuries, intense heat or cold, and occurs also in parts deprived of their blood-supply. In dry gangrene the tissues are not invaded by microbes, therefore mummify, producing slight constitutional disturbance. When the tissues break down the microbes find a fertile soil.

Measures to promote circulation should be taken. The part affected should be elevated, disinfected, and kept warm. Pain must be controlled by morphia. Nutritious diet must be given, and the bowels kept open. Alorossoff recommends galvanism. When pulsation can be discovered in the main artery in the limb

amputation should be performed at the point at which pulsation is detected, never lower. If the patient is old, or the cause be diabetes, amputation is useless; the case is hopeless.

PÆDIATRICS.

UNITED STATES.

A Case of Progressive Muscular Dystrophy.

T. DILLER (*Penn. Med. Jour.*, March, 1898) reports the case of a boy of thirteen years, ill for three years, who presents a muscular atrophy involving chiefly the muscles of the shoulder girdle, the upper arms and thighs, and the pelvic girdle; the atrophied muscles are flabby. The other muscles are little or not at all affected, there have been no sensory symptoms, and no fibrillary twitchings. There is marked lordosis on standing, but on sitting the curvature becomes a posterior one. The gait is slow and waddling; in picking up a coin from the floor the boy rests his hands first upon his knees, then gradually climbs up on his thighs, and when almost erect suddenly throws his body backward. The writer considers the case one of progressive muscular dystrophy, nearly of the type of Erb. Muscular dystrophy he divides into two forms, *i.e.*, that attended with atrophy, and that with pseudohypertrophy; and the former again into the juvenile or Erb's type, and the infantile or Landouzy-Déjerine type. All of these forms are due to disease of the muscles themselves and present practically no differences except the presence of atrophy or hypertrophy, the latter really a progressive muscular weakness merely characterized by fatty and connective-tissue deposits, and by the distribution of the lesions. No efficient cause could be found for the disease in the case reported.

Report of an Operation for Cleft Palate.

T. FILLEBROWN (*Jour. of Med. and Sci.*, March, 1898) describes an operation upon a boy five years old, in whom the cleft was fully seven-eighths of an inch wide. He made his first cut at the upper edge of the cleft and dissected from the hard palate the tissue, including the periosteum, nearly to the alveolar border. The edges of the soft palate were then pared. Next, wire sutures were run through the flaps from the hard palate and fastened through silver discs. Tension on the soft palate was relieved by lateral incisions external to the tonsils. The wire sutures were then drawn tighter and their ends twisted together, thus bringing the edges of the flaps from the hard palate in close apposition. Additional interrupted silk sutures were used in the mucous membrane. The result in this case, as in four others operated on in the same way, was very satisfactory. By this method the lateral incisions near the alveolar border are avoided, the discs and wire sutures take the strain from the parts as well as hold them in better position, and the pillars of the fauces are not cut. The later results are also very satisfactory, the freedom from catarrhal inflammations, the gain in general condition, and especially the very marked improvement in speech.

Erasion of the Knee in Children, with Conservation of the Epiphyseal Cartilages.

H. M. SHERMAN (*Southern California Practitioner*, March, 1898) raises the question whether, in tuberculosis of the knee, it is possible to remove the articular cartilages of the tibia and femur, and also all the ossified portions of the epiphyses, scraping them carefully from the epiphyseal cartilage, without interfering with the physiologic function of the latter in the general development of the limb. Three cases are cited. The first two presented themselves late in the disease when there were much flexion, subluxation of the tibiæ, rigid contraction of the posterior tissues and sinuses. Corrective treatment was first tried, then total arthrectomies and epiphysiectomies, apposition maintained by plaster-of-Paris splints, in spite of which some flexion occurred. Radiographs of these cases show bony union of the tibiæ and femora; also, that in place of the epiphyses—between the opposing ends of the diaphyses—considerable growth of new bone has taken place; possibly the flexion is due to excessive development of this bone anteriorly. In one case careful measurements of the two limbs show that some growth must have occurred at the knee, the leg having grown about 2 cm. more than the thigh from the slighter injury to the tibial cartilage. The fibula has not outgrown the tibia; from which it seems fair to assume that the tibial epiphyseal cartilage is still functioning. In the other case the fibula has outgrown the tibia. The third case—a boy of ten years—applied early for treatment; the tibia was trephined and the entire ossified part of the epiphysis removed, also the juxta-epiphyseal portion of the diaphysis; this left two cavities, separated by the central part of the epiphysis, which promptly sloughed. Healing then occurred, and the radiograph shows that the cavity has been filled, apparently by bone; the functions of the joint and bone are perfect, and the slight amount of shortening has not increased.

The Diagnostic Value of Tuberculin.

DILLON BROWN (*Pediatrics*, March 1, 1898) urges the great value of the diagnostic use of tuberculin in the early diagnosis of tuberculosis, particularly of the glands, bones, joints, peritoneum, and pleura, where early diagnosis offers the only hope of successful treatment; and in cases of tubercular meningitis, which may so closely simulate typhoid fever. The manufacture of tuberculin is not costly nor very difficult, and is described at some length. The dose for diagnostic purposes is somewhat undetermined; the writer uses one milligram in young children, and from five to ten milligrams in adults; in order to regulate the dose accurately it is wise to dilute the tuberculin with a sterile half-per-cent. solution of salt in water. Every antiseptic precaution should be taken, and the dilution should be freshly made. It is better to give a large dose at once, lest preliminary small doses establish a tolerance for the tuberculin and the reaction be lost. This consists of a rise of temperature and of pulse-rate, the local reaction being of little diagnostic importance. The absence of reaction is almost positive proof of the absence of tuberculosis, while the presence of the former in four cases out of five shows the presence of the latter. The use of tuberculin is perfectly safe.

Some Diarrheal Diseases of Children.

F. H. STANBRO (*Buffalo Med. Jour.*, March, 1898) emphasizes the necessity of the physician personally examining the stools of children suffering from diar-

rhea. Summer diarrhea may be divided into several classes. The first we may call acute dyspeptic diarrhea; it is due to fermented or improper food, or a lowering of the child's digestive power; the undigested food acts as an irritant and the diarrhea is an effort toward its removal. A cathartic in the early stage will generally cure the disease, but if the improper feeding is continued vomiting sets in and the stools become more profuse and fluid and contain mucus and blood. We must then quiet the stomach before giving any laxative, though sometimes 1-10 grain tablets of calomel seem to fulfill both indications. Generally all nourishment should be withheld for from six to twenty-four hours, and even water given in small quantities. Albumen water, given from a spoon, should be the first nourishment allowed; the intestines may then be disinfected by calomel, salol, gallic or tannic acid, combined with bismuth subnitrate, or arsenite of copper; the last remedy has been very successful in the writer's hands. One one-hundredth of a grain is dissolved in four ounces of water, and a teaspoonful of the solution given every fifteen minutes for an hour or two, then every hour. Children that have had several attacks of this dyspeptic diarrhea are more likely to develop a sudden cholera infantum. This latter class of cases need sustaining and stimulating treatment; washing out the stomach may control the vomiting, or if large quantities of water are given the stomach will wash itself; high injections of warm water to which a little salt is added, external heat and hot baths, very small doses of morphine hypodermatically, and champagne and other diffusible stimulants if the stomach will retain them, are recommended. Both the dyspeptic diarrhea and cholera infantum are liable to pass into a chronic enterocolitis; such cases will have pain and tenderness over the colon, tympanites and semi-solid stools mixed with mucus and blood; they will also have attacks of acute diarrhea. These cases should be kept very quiet and out of doors as much as possible; opium may be given if the stools are not offensive; high injections of salt water, of cupric arsenite, gallic or tannic acid, or silver nitrate, often do good; tenesmus may be relieved by rectal injections of starch and laudanum; the diet should be such as will leave the least possible residue.

A Case of Congenital Umbilical Hernia with Perforation.

C. D. SIMMONS (*New Orleans Med. and Surg. Jour.*, April, 1898) observed upon one side of the cord of a newly delivered healthy child a protrusion, firm to the touch, and irreducible, but without gurgling or other diagnostic symptoms; at one side there was a bright red spot. The cord was tied above the hernia. Thirty-six hours later the child was found with a very rapid pulse and respiration; on removing the umbilical dressings a large evacuation of feces occurred through the stump-like process, the coverings of the hernia and cord, except a little necrotic tissue at the base of the protrusion, being gone. The extremity of the protrusion was antiseptically ligated, and a catheter passed into the rectum brought a large normal movement. Olive-oil by mouth with two daily enemata were ordered; for forty-eight hours stercoraceous vomiting was frequent; then the child had three large movements, and from that time on rapidly improved; the hernia receded, and at the end of a month the navel was in a normal condition. The writer concludes that one wall of the intestine must have been caught in the umbilical ring, through failure of the omphalo-mesenteric canal to close before birth.

THE
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AUGUST, 1898.

TWO-YEARS' WORK WITH THE SPRAGUE STERILIZER
IN THE GYNÆCOLOGICAL DEPARTMENT AT THE
ST. ELIZABETH'S HOSPITAL, BOSTON.

BY F. W. JOHNSON, M.D., Boston.

Visiting Gynæcologist.

In the Gynæcological Department there are eighteen ward beds and seven private rooms with a capacity of ten beds. These private rooms are shared in common with the medical and surgical departments.

As the following experiments might cause those not conversant to think that we are not as clean as a hospital could or should be, I have given these statistics to show the amount and quality of the work done during the two years.

During the period of two years, April 1, 1896, to April 1, 1898, there have been in the Gynæcological Department 242 coeliotomies with 4 deaths.

Of these coeliotomies 68 were done for hysterectomy with one death. Thirty-four were done for fibroids, eleven for carcinoma, and most of the others for tubercular disease of the tubes and uterus or for double pyosalpinx where the uterus, after having been freed from adhesions, would have been left more or less stripped of its peritoneum.

Three of the four deaths occurred during my service. But in extenuation I would add that I was on duty eleven months out of these twenty-four.

The death not chargeable to me followed a Cæsarian section performed on a patient in extremis.

My first death was due to shock. The patient died within a few hours after being put in bed.

An autopsy discovered no cause of death. So adherent were the abdominal contents that it took fifteen minutes to find and separate the uterus.

The second one died of sepsis on the fifth day. Six inches of the colon were resected for tubercular disease.

The third death was due to shock. The patient was put to bed in excellent condition. At about five o'clock the next morning she was seized with severe, excruciating pain in the right side just under the ribs. The pulse at once increased in rapidity, soon reaching 140.

A careful post-mortem disclosed no cause of death.

In addition a great deal of plastic work and a large number of Alexanders were done.

For nearly four months during these two years little operating was done owing to changes which were being made in the internal arrangement of the hospital.

This certainly is a good record.

Long ago I recognized the fact that the poor surgeon and poor anatomist got better results if he was clean than the first-class surgeon and anatomist who was not particular. Consequently my object has been to get everything as near perfectly clean as possible.

Certain tests and experiments were made that we might know the working conditions of the sterilizer, then an examination was made of the dust circulating about the operating-room during an operation, and finally we tested the power of the sterilizer to destroy micro-organisms.

First the thermometer and gauge of the sterilizer were tested.

This was done by sending the gauge and thermometer (the thermometer registers both heat and pressure) to an expert. He found them correct and also found that they registered alike when in use.

Then the *standard* thermometer was tested and found correct.

The above is done every now and then as a matter of routine by the Sister in charge of the operating-room.

The standard thermometer was then placed in the center of twelve towels; these were done up in a compress and finally the bundle was pinned up in a comforter.

This bundle was left in the sterilizer for twenty minutes at ten pounds pressure. The heat at the center of this bundle, as indicated by the standard thermometer, was found to be the same as that registered by the thermometer attached to the sterilizer.

So far this was satisfactory. We were *absolutely certain* that we

could get inside of every surgical dressing just the temperature we desired.

Next I thought it would be instructive and interesting to find out how many and how large a variety of micro-organisms were to be found in the dust in circulation in the operating-room during a coeliotomy.

I was *especially* anxious to ascertain if any pus-producing organisms could be found in the dust.

The room is kept as clean as soap and water and corrosive sublimate can effect the cleanliness of its floor and walls.

The following is the report of Dr. E. A. Darling, Assistant in Bacteriology, Harvard Medical School.

Four Petri double dishes containing films of sterilized and coagulated blood-serum were exposed in various parts of the operating-room during a coeliotomy, the period of exposure varying from one hour and twenty minutes to one hour and fifty minutes.

The plates were exposed during the middle of the forenoon of December 28, 1897.

One dish was placed on the floor where we supposed the dust would be kept in most active motion by our feet and the nurse's dress. One was placed on the stand holding the sponge-pails; one was placed on the patient's knees raised in the Trendelenberg position, and one was placed on the table beside the instrument-tray. The dishes were uncovered just as the knife went through the skin.

At the conclusion of the operation the dishes were covered, conveyed to the bacteriological laboratory and placed in the incubator at 37° C. for several days.

After twenty-four to seventy-two hours the plates were opened and the colonies counted.

At the same time an attempt was made to determine the varieties of bacteria present, and particularly to demonstrate the presence or absence of the pyogenic forms.

Cover-glass preparations and cultures were made from as many different kinds of colonies as could be distinguished.

The results are, in brief, as follows:

Plate A.—*Sponge* table, exposed 1 hour 50 minutes; after 24 hours showed 216 colonies; 72 hours, 296 colonies.

Plate B.—*Knees of patient*, exposed 1 hour 20 minutes; after 24 hours showed 156 colonies; 72 hours, 280 colonies.

Plate C.—*Floor*, exposed 1 hour 50 minutes; after 24 hours showed 296 colonies; 72 hours, 428 colonies.

Plate D.—*Instrument table*, exposed 1 hour 40 minutes; after 24 hours showed 216 colonies; 72 hours, 256 colonies.

The varieties of bacteria present were studied minutely on Plate B. (the one on the patient's knees), less carefully on Plate D. (the one on the instrument tray). Of the recognized pyogenic cocci, two varieties were found—the staphylococcus albus (15 colonies on Plate B., 20 colonies on Plate D.) and the staphylococcus aureus (3 colonies on Plate B., 4 colonies on Plate D.).

The remaining colonies on both plates were sarcinæ of several kinds—yellow, orange, and white moulds, and several varieties of unrecognized bacilli and cocci.

As would be expected, the plate from the floor showed the largest number of colonies. Plate B. (the one on the patient's knees) most interested me.

The finding by Dr. Darling of fifteen colonies of the staphylococcus albus and three colonies of the staphylococcus aureus on this small plate within a few inches of the opened abdominal cavity was certainly a grand object-lesson and has given lots of food for reflection.

Contamination of wounds by micro-organisms which may be in the dust of the operating-room might be greatly diminished by filling the room with moist steam just before an operation, thoroughly sprinkling the floor with an aqueous solution of corrosive sublimate, by using wet towels about the patient, by diminishing the number of spectators, and by reducing to a minimum the number of assistants.

Finally, I had Dr. Darling test the power of the sterilizer to *destroy* micro-organisms.

“Sterilized silk threads were saturated with twenty-four-hour-old bouillon culture of staphylococci pyogenes aurei, staphylococci pyogenes albi, bacilli anthracis, and bacilli diphtheriæ.

“They were then inclosed in several thicknesses of flannel, making a bundle much larger in size and more impenetrable than any ordinary surgical dressing and then subjected to the sterilizing process, steam under pressure of ten pounds for twenty minutes.

“The threads were then removed and placed at once in bouillon. The process was repeated, using a pressure of fifteen pounds for twenty minutes.

“After four days in the incubator at 37.5° C. there was no growth in *any* of the tubes.

“The sterilization at ten (10) pounds pressure for twenty (20) minutes may, therefore, be regarded as entirely efficient.”

One assistant is all that is needed. Never allow anybody except the assistant to touch *anything*.

At all operations a cap should be worn to prevent dust and dandruff falling from the head. Every scale from the head or beard is alive with micro-organisms.

I believe it would add much to cleanliness if the surgeon's face was clean-shaven as well as clean-washed.

All bacteriologists are unanimous in the opinion that it takes at least two days with frequent scrubblings, washings, and using of permanganate of potassium and oxalic acid to get the subinguinal spaces sterile after they have once become infected with pyogenic organisms.

IS THE USE OF THE RECTAL SOUND SCIENTIFIC?*

BY THOMAS CHARLES MARTIN, M. D.,

Lecturer on Diseases of the Rectum in the Cleveland College of Physicians and Surgeons.

It is reported that Syme said:† "There is good reason to suspect the honesty of a man who pretends to enter a stricture which is beyond the reach of the finger."

There could scarcely be a more epigrammatic confession of helplessness nor one seemingly more devoid of hope than this.

The great array of variously formed sounds which surgeons of unquestioned integrity have designed especially to locate and to enter strictures of this organ, is further evidence that it is not unusual for medical men to entertain diverse opinions. Though Syme's terse pessimism may, perhaps, have summed the sound's possibilities as a diagnostic measure, the inquiring student reasonably fails to be convinced so long as there is no good reason given to support so pungent an affirmation.

That the employment of the sound within the movable rectum is not consistent with the mechanic principles upon which the practice of surgical sounding is based, is, I believe, not difficult to demonstrate; that to enter a stricture by such means is possible, but often impracticable; that the attempt is fraught with danger, and as a di-

* Read before the Ohio State Medical Society, Meeting in Columbus, May 15, 1898.

† Ball, "The Rectum and Anus," p. 14. Lea Brothers & Co., Philadelphia.

agnostic instrument that the sound, as commonly used, is never reliable, is also susceptible of proof.

Sounding as a method of diagnosis requires three conditions: (1) That the tube to be sounded must have a recognized limit of distensibility; (2) that its mobility in the direction of its axis must be inappreciable, and (3) that there be not at irregular intervals normal anatomic obstructions in its channel sufficient to arrest the progress of a sound.

These conditions obtain in the urethra, which is fixed from extremity to extremity within a mass of tissue, which firmly supports it when the organ is in a situation for the practice of the maneuver. The rectum, on the contrary, answers negatively to each of these three propositions.

Seven or eight inches (17.78 or 20.32 cm.) of the rectum's length are not fixed; the lower-most inch (2.54 cm.) is the only portion muscle-bound, and as this part is easily accessible to digital exploration, to it, therefore, the method of diagnosis by sounding is not applied. A little way beyond the upper border of the prostate or pelvic floor in the female the rectum is invested by a loop of peritoneum which does not yoke the gut fixedly but anchors it loosely in the abdominal cavity.

1. The distensibility of the abdominal rectum is governed by the elasticity or the resistance of the gut's inherent coats, and is not limited by a comparatively unyielding musculofibrous wall supplied by the contiguity of other parts twenty-fold its own strength and several times its own density and bulk, as is the case with the male urethra. The normal range of distensibility of the rectum, then, may be said to be from zero to three and one-half inches (0 to 8.89 cm.), and consequently a definite calibration for sounding is impossible. The sound of a size which may enter the anus is not to be considered elected for sounding the rectum (in accordance with the principles governing urethral catheterization which may be formulated in the aphorism: that sound which fits the mouth should discover contractions in the tube), as shall be seen.

The average diameter of rectal sounds is about one inch (2.54 cm.). Two-thirds or three-fourths of the rectum's expansibility, which may be more than three inches (7.62 cm.), must then of necessity be sacrificed before rectal sounding will produce any definite evidence of stricture, providing all other things are equal and comparable to conditions obtaining in urethral catheterization.

2. Let us suppose, now, that there exists a considerable con-

striction of this gut. In such a case the element of mobility of a part of the rectum in the direction of its axis enters into the problem. The range of such movement of that part of the gut constricted is determined by the length of its peritoneal attachments at that point and by the elasticity of the mesentery and of the neighboring portions of the gut, possibly by adhesions of the rectum to other organs, and also depends upon whether the contraction be on the side next the mesentery or opposite it. To discuss these special points in detail would be to dwell upon the degrees of a fallacy. The perplexing fact is this, and it is one that in itself should dethrone the practice of sounding the rectum for the diagnosis of stricture: A bulb-tipped sound entering the rectum and coming in contact with a contraction presenting an aperture of lesser diameter than the bulb will carry that part of the gut above its normal situation to a point where the limits of length and elasticity of its attachments arrest the movement, at which time the sound will be stopped, or else will enter, dilate, and pass the stricture, or, perhaps, puncture the gut.

When the sound encounters an obstruction, it is, of course, conventional practice to observe how far *the proximal border* of the supposed stricture is from the anus, which, let us say for purposes of illustration, is exactly five inches (12.7 cm.). This measurement having been determined, it is now desired that a knowledge of the exact location of the stricture's *distal border* be obtained that the length of the gut affected by the contraction may be estimated. Having passed beyond the stricture, the sound is gently withdrawn, the shoulder of the bulb presently engaging the upper border of the constriction will carry it downward until arrested by the gut's limit of displaceability; the exposed length of the shaft of the sound is now measured, and it is discovered that the most distant border of the contraction, instead of being more than *five inches* (12.70 cm.), is but *three inches* (7.62 cm.) from the anus; or, to make a paradox, it is discovered that *the farther border of the stricture is two inches* (5.08 cm.) *nearer the anus than the nearer border was!* *Reductio ad absurdum!*

3. There is, however, one other factor, which, when fully recognized, will effectually discountenance the practice of sounding according to customary rules. The semilunar valves, which I have demonstrated to be typical anatomic valves,* and possessed, there-

* See papers by the writer in *Mathews' Quarterly Journal of Rectal and Gastro-Intestinal Diseases* (Louisville), July and October, 1896.

fore, of a structure which qualifies them to offer both active and passive resistance, and which span one-half, two-thirds, and sometimes three-fourths the circumference of the rectum, and which have a depth from free border to that attached to the wall of the gut, varying from a quarter of an inch (0.63 cm.) to one inch (2.54 cm.), according to the degree of distension of the rectum; these valves

FIG. 1.



afford, in many instances, an effectual obstacle to the passage of the bougie; they supply evidence which stimulates that of stricture when the sound is used, and a valve may constitute a very ready pocket to trip up and deflect the sound's point out of the channel of the gut through its wall and into the peritoneal cavity.

Analytic survey of the anatomy of this part and study of the mechanics of surgical sounding compel the conclusion that the

enormous normal distensibility of the rectum (Plate I.), its great susceptibility to upward and downward displacement (Plate II.), and its normal valvular partitions (Plate III.) are significant that the customary method of sounding the rectum for the diagnosis of stricture is unscientific, is unprofitable as a diagnostic measure, and is extremely hazardous to the life of the patient.

1077 Prospect Street, Cleveland, Ohio.

The specimen from which these photographs were taken was removed from a male subject a few hours after death. The gut was prepared* by fixing the cadaver in the knee-chest posture and pour-

FIG. 2.



ing melted paraffin into the atmospherically distended rectum; when sufficiently hardened the cast-filled gut was carefully removed. The rectum is pictured in that position which it occupies when under atmospheric inflation for procto-colonoscopy.

Plate I.—The rectum, actual size. The anus, with attached portions of cuticle, is seen at the center. The diameter vertical to the axis of the ampulla is seen to be three inches (7.62 cm.), and its transverse diameter is observed to be three and one-half inches

*This method was fully described in the July (1896) number of *Mathews' Quarterly Journal of Rectal and Gastro-Intestinal Diseases*.

(8.89 cm.). The upper third of the rectum and the lower portion of the sigmoid flexure are somewhat out of focus.

FIG. 3.



Plate II.—The rectum, one-half actual size. The muscle-bound or fixed anal end is seen at the right. Two inches (5.08 cm.) above

the anus may be seen the irregular surface, from which the peritoneal fold was separated; from this point upward, as is well known, the rectum is somewhat freely anchored in the abdominal cavity: The lower end of the sigmoid flexure is out of focus.

Plate III.—Interior of the left half of the rectum, reproduced two-thirds actual size. Three inches (7.62 cm.) from the anus, which is shown at the left, is seen a well-developed normal semilunar valve, which spans one-half the circumference of the rectum and obstructs one-half its lumen. Four inches (10.16 cm.) above this valve, and seven inches (17.78 cm.) above the anus, is seen another semilunar valve, which obstructs two-fifths of the channel. At a point midway between these two valves on the opposite, right half of the rectum, which is not here pictured, was also another anatomic valve.

AN IDEAL CONCEPTION OF AN IDEAL HYSTERECTOMY FOR UTERINE CARCINOMA.

By THOMAS H. HAWKINS, A. M., M. D.,

Professor Gynecology and Abdominal Surgery, Gross Medical College, Attending Gynecologist to St. Anthony's and the Arapahoe County Hospitals, Denver, Colorado.

Vaginal hysterectomy is perhaps all sufficient in carcinoma uteri where the disease is recognized early, when only the cervix is but slightly involved—yet this is questionable. Not long since it was considered all sufficient to remove the small carcinomatous nodule in the mammary gland, yet to-day few surgeons are satisfied with the ablation of even the entire breast; they do more, in many cases removing the pectorial fascia and muscles, opening up the axilla and entirpating all the granular tissue there. One thing is certain, in order to expect good results the operation must be thorough and all tissue involved or suspectedly involved must be eradicated. The operation must be a radical one.

Most cases of uterine cancer do not come to us early; they seek our help when it is not only difficult to do a vaginal hysterectomy but a radical operation is impossible. I have during the past two years, operated on quite a large number of cases of cancer of the uterus, doing hysterectomies by the vagino-abdominal method. In every case of more than ten months since the operation the malady had already returned; in fact, in all the cases of more than three months save one or possibly two there are always signs of reappearance. I

have lost but two patients from the operation, both of whom died within twenty-six hours. Just what the cause of death was I don't know—perhaps shock, chloroform narcosis, intestinal paresis, acute septicemia; all of these or none—"I don't know."

By a gradual process of evolution during the past few years I have, I think, very nearly perfected an ideal operation for hysterectomy in these cases. The operation as I do it to-day I will now describe as briefly and succinctly as possible. To preface, I wish to say that I am claiming nothing original for myself, except that through my own experience and gleanings from the experience of others I have arrived at my present ideal. Our ideal of to-day may be imperfect and even crude when contrasted with our ideal two years hence, but every ideal is built upon another; we should make every day's operation a perfect work along the line of a desired ultimate ideal conception:

First, the preparation of the patient is of great importance. We should have the patient in the hospital, or the place where she is to be operated upon, for at least two days before the operation, or perhaps a week in most instances would be better. Here we may keep her under close observation, studying carefully her general condition, and make all due and timely preparation. We should choose the anesthetic best suited for the patient, yet in all my cases I have had chloroform administered. The anesthetic should be entrusted only to an experienced anesthetizer. The temperature of the room should not be below 78. Every possible provision for a thoroughly aseptic operation should be made.

The patient on the table and completely anesthetized, I begin the operation with the preparation of the abdomen; this done, the abdominal cavity is quickly opened in the usual way, the patient being in the Trendelenburg position, the omentum and intestines are pushed up well out of the way and protected by the sterilized gauze abdominal pad, and the uterus is grasped with a double tenaculum. A careful examination is now made to ascertain whether the disease has extended far up into the body of the uterus or into the broad ligaments, and also whether any glands are involved or not. The ovarian artery is ligatured on each side, the upper portion of the uterus freed, the flap and bladder are separated in the usual way, except that the bladder is detached as far down as possible without entering the vagina; the uterine arteries are tied and divided from the uterus; the pelvic peritoneum may then be split and the uterus be hooked up on either

side and pulled out of the way, and any enlarged glands or suspicious tissue be removed; The internal iliac arteries may be tied if thought best; the uterus is then gradually separated as far down as deemed prudent. If there is any suspicious tissue which is not easily removed, this should be thoroughly burned with the cautery. If the uterus is in the way it may be amputated (where the cervix is not greatly involved) low down and the cervical canal cauterized and packed with iodoform gauze; or, if not removed, I then put in a pelvic tampon, that is, a packing of sterilized gauze between the uterus and bladder; push the bladder well up and out of the way, likewise the ureters from the sides of the womb; a large piece of gauze is then packed into the *cul-de-sac* well down behind the cervix, making altogether four large gauze pads. In some instances I think it desirable to divide the peritoneum around the sides and behind the uterus down well into the *cul-de-sac*, pull this up, amputate the uterus close down, pack gauze under the bladder and down the side of the cervix, pull up peritoneum from below and stitch the bladder-flap peritoneum to it with a continuous catgut suture as in an ordinary hysterectomy, except that the amputated cervix is left free. This places the cervix and gauze extraperitoneal; whether this or the first method is followed or not must be left to the judgment of the operator. The abdominal protection pads are now removed, the patient lowered, the intestines and omentum pulled down, the abdominal incision closed and the usual abdominal dressing applied. All of this work should be done as rapidly as possible.

The patient is then placed in the usual position for a vaginal hysterectomy; the soft or loose portions of the diseased cervix are rubbed or scraped off with the finger, and the vaginal and external genitalia are thoroughly cleansed in the usual way. Sometimes I burn off part of the softened or sloughing tissue with the cautery, then either with the scalpel or the galvanocautery knife I open into the posterior *cul-de-sac* extending the incision well up on both sides of the cervix. If the uterus has been left, I take a long, strong vulsellum forceps, pushing one blade well up into the uterine cavity and the other high up into the *cul-de-sac*, and grasp firmly the posterior walls of the uterus, then complete severing the uterus with the cautery or knife or scissors, as seems most desirable. If the uterus has been amputated I pass my finger into the *cul-de-sac* up behind the stump and pull it backward and in this way get it out of the way of the bladder, so completing the separation of the cervix with less danger of trauma to that viscus. The uterus out of the way, I then

place some extra gauze in the position previously occupied by this organ. During the whole operation the intestines are walled off by the pelvic tamponade, so there is practically no danger of infection, and little or no liability of injuring the intestines or bladder.

When the cervix or uterus is removed I then thoroughly cauterize the upper end of the vagina and all suspicious tissue. The parts should be carefully and completely cleansed. In some instances I remove the gauze and repack; sometimes, if there has been much hemorrhage, or the operation has already been long, or the patient for some reason or other is not doing well, I leave the gauze from 24 to 48 hours, then give chloroform and remove, wash and repack. When the uterus is taken out through the abdominal incision I always take out the slight packing and refill the small extraperitoneal cavity with iodoform gauze; but where the large packing remains or is removed and repacked, I have been a little afraid to use so large a quantity of iodoform gauze and have therefore of late employed the plain sterilized gauze. Two cases of well pronounced iodoform poisoning have caused me to be a little chary about the use of so much of this kind of gauze.

This operation I think possesses advantages and is almost unique in conception. When it can be carried out in all the details described it is well nigh perfect; of course many complications will be met with and the operation will not always prove as easy of performance as of description. There is practically no danger of infection. The pelvic tamponade not only protects the abdominal and the pelvic organs against sepsis but also lessens the danger of injury; there is less danger in this way of injuring the ureters, and the danger of wounding the bladder is reduced almost to a minimum. The diseased tissues, unless implicated to a degree that renders the case practically inoperable, can be thoroughly eradicated; and even suspicious tissue if not removed can be burned away. Finally, I believe that the danger of return is greatly lessened. This operation in my judgment will do for carcinoma uteri what the Halstead operation did for cancer of the breast, perhaps more.

A light dressing in the vagina is all that is necessary. The patient should be catheterized before being removed from the table, and at the same time a high rectal enema of salt solution and peptonized milk should be given if her condition is not good. I would not hesitate if the patient were in a very weak state to leave the second part of the operation for 24 or even 48 hours. The pelvic tamponade would do no harm, and in this lapse of time the patient

would rally, and the vaginal portion could be removed, the gauze taken out and the parts cleansed and a fresh gauze packing introduced.

The mortality from vaginal or abdomin-ovaginal hysterectomy is not high, and I believe that this method will not increase the mortality—on the contrary I think it will somewhat reduce it; yet even if the death-rate were to be raised by so radical an operation, I should still advocate it, because in cancer of the uterus the patient is doomed at any rate in the very near future. These cases are absolutely hopeless, and the short time they have to live is undesirable, because their lives are made miserable on account of pain and other symptoms. I therefore believe that we are justified in restoring to the most thorough radical measures if they give the least promise of satisfactory results. We are certainly justified in taking many chances if by so doing we can see even a possibility of bettering the patient's condition; death to all these women is preferable to life unless they can be cured or their condition be bettered.

TWO CASES OF TUBAL PREGNANCY; OPERATION IN THE PRERUPTURE STAGE.*

BY NATHAN G. BOZEMAN, M.D., NEW YORK.

I believe it has already been demonstrated that after the death of the fetus contained in the Fallopian tube in cases of ectopic gestation the placenta continues to grow. As an illustration of this fact I shall cite two cases which came under my observation, in the one the development of the fetus which was found did not correspond to the computed stage of gestation and presumedly had perished some time before, and in the other the fetus had become absorbed, for no distinct traces of it could be discovered; still, the placentas were to all appearances not in a quiescent stage and there was in my judgment imminent danger of rupture of the tubes when the operations for their removal were performed.

Mrs. M. G., aged 39, was admitted to St. Mary's Hospital on May 12, 1897. She has borne three children, but there has been no pregnancy for four years; just previous to her admission she passed over two periods when suddenly she began to flow rather profusely, for

* Read before the Women's Hospital Society, on April 19, 1898.

which her family physician curetted her uterus, but as it did not cease she was sent to the hospital. When I examined her I found a tumor the size of my fist situated to the left of the uterus, the top of it being slightly above the level of the fundus. The uterus itself was somewhat enlarged and soft, but there were no other distinct physical signs of pregnancy. The previous history of the case coupled with the distended tube warranted me in making the diagnosis of ectopic pregnancy. I made several examinations though before operating. During the few days that the patient was under observation she complained very much of severe spasmodic pain low down in the left side.

On opening the abdomen I found intestinal and omental adhesions around the dilated tube, and in separating these at one place on the anterior aspect of the sac blood spurted out in a continuous jet until I had transfixed the broad ligament and tied it off with a double ligature, I then removed the mass intact and the abdominal wound was closed. Examination of the specimen showed the wall of the tube to be very thin at the point where the hemorrhage occurred during the operation, an incision into the tumor revealed a fetus slightly over $\frac{1}{2}$ inch in length suspended by its cord in the amniotic sac, the latter being surrounded by placenta. I was surprised to find so small a fetus when I supposed the woman to be 12-weeks' pregnant, the only explanation that I could give was that it had ceased to grow some time before, but that the placenta was still weakening the wall of the tube by its presence, and I cannot but believe that the bleeding which I have mentioned had almost actually begun before my interference.

Case II.—Mrs. A. K., aged 23, was admitted to St. Mary's Hospital on September 15, 1897. She had been married several years and was always regular until two months before admission when she missed two periods. She sought advice on account of a severe spasmodic pain low down in the left side of the pelvis which had come on about one month previous, at which time she began also to have a continuous flow. I found the uterus enlarged and soft and a distended tube to the left of it the size of an orange. I suspected ectopic pregnancy and after keeping her under observation a few days operated. There were no adhesions around the sac but the portion of the Fallopean tube which was between the tumor and the corresponding horn of the uterus was hard and about the size of a lead-pencil and it was bent in a very acute angle on itself which was undoubtedly the cause of the obstruction in the tube. The specimen

after removal was carefully incised showing a placenta within the tube, also the amniotic sac filled with liquor amnii, but no fetus. My belief was that in an earlier stage of its development it had perished and had been absorbed. Although the evidences of an impending rupture on account of the placenta were not so marked in this case as in the previous one, still the possibilities of such a termination of the case were not so very remote.

ON THE RELATION OF THE GREAT NEUROSES TO PELVIC DISEASE.*

BY F. X. DERGUM, M.D.,

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The relation of nervous and mental affections to organic disease is a most interesting subject, and one which has been the cause of repeated discussion. Much confusion exists in the minds of general practitioners and also, I fear, in the minds of surgeons with regard to the common nervous affections met with in daily practice. The reason is to be sought for in the fact that men who are busy in general practice, or in their chosen special field of surgery, find it difficult, if not impossible, to keep in touch with the progress made in other departments, such as neurology. Gynæcologists naturally view the troubles from which women suffer from the standpoint of the surgeon. It is fitting, therefore, that I approach the subject to-day from the standpoint of the neurologist and first direct your attention to the essential facts presented by the great neuroses. I employ the term, the great neuroses, for those two exceedingly common affections, neurasthenia and hysteria—affections, by the way, which are almost as frequent in the male sex as in the female, and may exist uncomplicated by any pelvic or other organic disease. I will consider them briefly in turn. First let us take up neurasthenia.

Too often the physician turns aside from the subject of neurasthenia as uninteresting, as being a term applied to a condition rather than a disease, and as presenting symptoms that are vague and ill-defined, and from a study of which nothing definite can be gained.

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In reality, neurasthenia is an exceedingly interesting affection; one which, far from presenting a vague and ill-defined symptomatology, presents a symptom group which is as fixed and as definite as any disease with which we are acquainted. It is true that now and then the symptoms differ widely in detail, but they always present the same essential features. They are always expressive of fatigue, and I have, therefore, myself proposed for neurasthenia, the far more expressive name of the fatigue neurosis. The stamp of fatigue is ineffaceably fixed upon every case. Every symptom is expressive of weakness, of irritability, and of ready exhaustion. A brief glance at the clinical picture will bear this statement out.

The symptoms resolve themselves into sensory, motor, general somatic and psychic disturbances. Beginning with the sensory disturbances, we have, first, a general sense of fatigue or tire. This may be diffused throughout the entire body, but is generally accentuated in special regions, *e. g.*, the head, the back, or the limbs. It is characteristic of this sense of fatigue that, in the simple and typical cases, it is brought on, if absent, or made worse, if present, by effort. It is expressive of diminished power for the sustained expenditure of energy and it is to be looked upon as one of the primary symptoms of neurasthenia. If the conditions causing this general sense of tire persist, the sensation ceases to be merely one of fatigue and becomes one of pain. In other words, when fatigue sensations become exaggerated, they become painful, and they are then described by the patient as aches of various kinds and are referred to special regions. Very commonly, for instance, the patient complains of headache. When present in a mild degree, this headache is described as a dull feeling or a dull aching, and is then relieved by the mere cessation of work or by rest. When it is more pronounced, it is referred to the occiput, to the vertex, or to the brow and may be associated with sensation of pressure or constriction about the occiput or temples, or with giddiness, or with ringing in the ears. No matter in what situation it is most pronounced, or how accompanied, it is always expressive of fatigue. Next in frequency, patients complain of backache. This at first may consist of a simple feeling of fatigue referred to the lumbar region and which is relieved by lying down, but which later may become so exaggerated as to make backache the most prominent feature of the case. The same is also true of fatigue sensations referred to the limbs. These may become so exaggerated as to make aching in an arm or in the legs the one symptom which leads the patient to seek medical advice.

When we turn our attention to the phenomena presented by the visual disturbances of neurasthenia, we find that they are also expressive of fatigue. I will not stop to analyze these phenomena as this would be too great a departure from the legitimate field of our discussion. I will merely pause to say that the symptoms are those of ready exhaustion and are referable to fatigue of the accommodative apparatus, the retina and the cerebral centers. One of the most common statements which we meet with in neurasthenics is that they cannot read for more than a few minutes at a time; that the letters become blurred and that the effort gives rise to pain, generally headache, or to other cephalic distress, such as vertigo. If time permitted, I would point out to you that similar truths obtain with regard to the other special senses.

When we turn to the motor symptoms we find that these also are expressive of fatigue. They consist more especially of muscular weakness which develops rapidly under exertion, of tremor and various modifications of the tendon reactions. The time at our disposal is entirely too short to consider the visceral and general somatic disturbances. These I have fully considered elsewhere. Suffice it to say, that the disturbances of circulation, of digestion, of secretion, and of the sexual functions, are all of them manifestations of fatigue. For instance the primary fatigue symptom referable to the digestive tract is that of a digestion delayed and enfeebled, an atonic indigestion both gastric and intestinal. The disturbances of circulation are manifested by feebleness of the pulse, coldness of the extremities, disturbances in the rhythm of the heart's action, and even by heart murmurs. The disturbances of secretion are manifested by change in the character and quantity of the perspiration, of the urine and of the saliva which again are also purely and solely related to fatigue. When we turn our attention to the psychic disturbances, we find that they also are expressive of fatigue. A marked and characteristic symptom, namely a diminution of the capacity for sustained intellectual efforts is invariably present. As the patient is incapable of long-continued physical labor, so is he or she incapable of long-continued mental labor. The attempt to do mental labor, sooner or later brings on symptoms of exhaustion, and if the task be persisted in, marked fatigue sensations make their appearance, especially headache. Associated with the lack of power for sustained effort, there is also the lack of power of concentrating the attention, and this the patient frequently mistakes for loss of memory. In addition to these symptoms, there is a lack of spon-

taneity of thought and a diminution in the strength of the will, a condition of general indecision, and mental and emotional irritability. Frequently, fear also is present, and may assume a general or a special form.

The symptoms that we have thus far detailed are those which I have termed in my writings the primary symptoms of neurasthenia, and they are always expressive of chronic fatigue. If we pause to analyze any one of these primary symptoms we will find that there is present as the essential condition not only a marked and persistent diminution of nervous energy, but also an increased reaction, mental and physical, to external impressions. In other words, to nervous weakness there is of necessity joined nervous irritability. Diminished resistance to fatigue implies diminished resistance to impression from without; weakness and irritability are thus necessarily associated. This is seen, for instance, in the motor symptoms where muscular weakness is associated with increased reflex excitability, and in many of the sensory symptoms, where, to the fatigue sensations, there are sooner or later added the symptoms of local hyperesthesia. Thus, hyperesthesia, often painful in character, is found over the spinous processes, over the coccyx, or over various other areas. Another illustration of the same general truth is found in the fatigue of the eye; here the patient is not only unable to use the eyes persistently, but there is also present, sooner or later, painful hyperesthesia and irritability of the eye to light, so that neurasthenics often begin to wear smoked glasses of their own accord. It is this increased reaction to impressions from without that is of striking importance, as we will presently see, when we deal with organic affection occurring in neurasthenic subjects.

To discuss the symptomatology of neurasthenia fully, would encroach too much upon the time allotted to this paper, but let me say in passing that there are present in addition to the symptoms I have mentioned as primary, other symptoms to which I have given the name secondary, or adventitious symptoms. To illustrate what I mean by a secondary or adventitious symptom, let me point out that it is very common, for instance, to find associated with the headache of a neurasthenia, other symptoms, such as sensations of pressure or constriction, of fulness, of heaviness, or of throbbing of the head. Often sensations are present which the patient cannot properly describe. It is extremely probable that these curious sensations are, many of them, if not all, the result of various intracranial circulatory disturbances and are not directly fatigue sensations. It is for this

reason that I have termed them secondary or adventitious. Time will not permit me to pursue this parallel into the other symptom-groups of neurasthenia more than to merely mention a few of them. Thus, among the motor symptoms, tremor, spasmodic jerking, fascicular contractions are not of themselves fatigue symptoms but are mere secondary outgrowths. Among the sensory symptoms, numbness, pins-and-needles sensations, velvety feelings, subjective sense of heat and cold are secondary symptoms. Among the visual disturbances secondary symptoms are generally indicated by such statements of the patient as, that objects look unnatural, that things look misty; or as though objects were looked at through a veil; or that everything looks dull or bright; that near objects look far away, or that they look excessively small or excessively large. These symptoms are evidently not fatigue symptoms but are clearly secondary or adventitious. Among the disorders of hearing, one of the most common adventitious symptom that we meet with is tinnitus, which is variously described as buzzing, whistling, roaring, or ringing.

I mention these various adventitious symptoms to-night merely because they sometimes obscure to the superficial observer by their prominence the primary or essential symptoms. To briefly re-state the facts, let me say first that by neurasthenia is meant the fatigue neurosis; secondly, that the two cardinal conditions of the fatigue neurosis are persistent nervous weakness, together with increased nervous irritability, that is, increased reaction of the organism to impressions from without. When we apply this interpretation of neurasthenia to the study of the diseases of the various special organs we find at once that a ready explanation is presented for many of the strange facts we meet with. How remarkable it is that an eye defect often remains undiscovered for years. A man who has become neurasthenic finds that exertion of the eyes brings on headache or makes headache worse, if present, because his resistance to fatigue has been diminished. In other words, an exertion so slight as to be utterly inadequate to evoke any symptoms whatever in a healthy man, may in a neurasthenic rapidly bring on a fatigue headache. In the same way a local defect or disease in other portions of the body may remain undiscovered as long as the general health remains good, and may only make itself felt when neurasthenia becomes established, *i. e.*, when the nervous system presents the phenomenon of increased or abnormal reaction to local impressions. This fact has especial application to gynæcology. It is well known that a woman with a laceration of the cervix or

perineum, a displacement, or possibly a prolapsus of the ovary may make no complaint as long as her general health remains good; not infrequently she fails to seek medical advice for the pelvic condition until neurasthenia has become established.

Without pausing to apply these considerations to the problems of pelvic surgery at this point of our discussion, let me briefly direct your attention to the conditions that I term collectively neurasthenia symptomatica or spurious neurasthenia. Grave visceral disease is, of course, associated with general bodily weakness, and this general bodily weakness is too frequently mistaken for true neurasthenia. Serious local or general disease weakens the entire organism, and with it the nervous system, and that various signs of nervous weakness should be present under such conditions is but natural. The symptoms present, however, never form that symptom-complex which characterizes the fatigue neurosis. Neurasthenia symptomatica is seen more especially in phthisis, in syphilis, in chlorosis, in the various anemias, in the toxemias due to infection or metallic poisoning, and in other grave disturbances of nutrition. It is important also to remember that it is also seen associated with the various insanities, and often constitutes the only feature presented by the prodromal periods of these affections. This last-mentioned fact is of the utmost importance, especially as patients in the prodromal periods of the psychoses are prone to be hypochondriacal, and to complain of various visceral ills. I have met with several instances in which the patients willingly accepted the explanation that their illness was due to pelvic trouble, and submitted to operation, while the subsequent history of the case was that of a developing and finally mature insanity, running its inevitable course.

With this brief allusion to the subject of neurasthenia symptomatica, let us pass to the considerations of the second of the great neuroses.

The second of the great neuroses is hysteria, or as I prefer to term it, the psycho-neuroses. I know of no affection concerning which there is still so great a lack of knowledge in this country and England, notwithstanding the fact that the French, and later the Germans, have unmistakably defined and described the symptomatology of the disease. We frequently hear it stated and almost as frequently see it printed, that hysteria is a disease without a syndrome; that it is a disease which presents an "infinite of shifting polymorphic nervous disturbances." This last phrase I borrow from a text-book on the practice of medicine, published in this country

not later than 1897, and nothing could be more untrue. In reality, hysteria presents a syndrome that is as fixed and as definite as that of any other disease with which we are acquainted. Like neurasthenia its cardinal symptoms are always present and always characteristic, while it is equally true that other symptoms, secondary in importance, are from time to time added, though the number of the secondary symptoms is far less than those met with in neurasthenia. I term hysteria the psycho-neurosis because the physical symptoms present in it are dominated by mental phenomena, themselves the result of a genuine and profound affection of the cerebral centers. Prominent, for instance, are emotional disturbances and modifications of the will, but to these are added physical signs so striking that they can never be misunderstood. The symptoms of hysteria, like those of neurasthenia, consist of sensory, motor, general somatic and psychic disorders. Let us begin with the sensory symptoms. In neurasthenia the sensory symptoms consist for the most part of fatigue sensations combined with symptoms of sensory irritability. In hysteria, on the other hand, fatigue sensations are absent, but instead there may be present true anesthesia, complete or partial; in other words, we are at once impressed with the fact of true sensory loss which never occurs in neurasthenia. Further, this sensory loss or anesthesia is so characteristic as to enable us frequently to make a diagnosis of hysteria from it alone. I need only allude to the condition of hemianesthesia, in which anesthesia is confined to one-half of the trunk, head, and limbs of one side. Strange to say, this sensory loss involves most frequently the left side. Again, the loss of sensation may be less widely distributed, and then it is frequently characterized by peculiarities of location; for instance, it may be confined to a segment of a limb, that is, it may extend from the elbow to the wrist, or from the knee to the ankle, and is then termed segmental anesthesia; again, it may cover the fingers, hand, wrist, and arm up to a certain level like a glove, and is then spoken of as glove-like anesthesia; or it may cover the foot, ankle, and leg up to a certain level, and then is spoken of as stocking-like anesthesia. At other times it assumes curious geometrical or irregular shapes. The fact which strikes the observer at once is the absence of correspondence of the various hysterical anesthetics to any nerve distribution or to any sensory representation in the spinal cord. This fact naturally refers us, in seeking for the seat of the disturbance, to the cerebrum. As regards hemianesthesia this is further rendered probable by what we know of the pathology of organic hemianesthesia, and it becomes

still more probable when we reflect that the facts at our disposal lead us to infer that the representation of the limbs in the cortex is by segments. To sum up, therefore, in hysteria it is the distribution of the sensory loss which is characteristic and which at once stamps it as hysterical. An important fact, however, should in this connection be borne in mind, and that is that the sensory losses in hysteria are most frequently far from being complete. Indeed, the most frequent condition that we find is that of *diminution* of response to tactile, to pain, and to thermal impressions, there being present under these conditions merely a general lessening of sensation, a hypoesthesia, or hypesthesia as it is termed technically. Partial sensory losses, therefore, having the peculiar distribution which I have stated, are as unmistakable in their significance as total sensory losses which are less frequently met with.

Far more important, however, than anesthesia or hyperesthesia is the hyperesthesia which is found in hysteria. This also may have a most varied distribution, but as a matter of clinical fact it seeks by preference certain localities. These are especially areas of hyperesthesia under the breasts, so-called "inframammary tenderness" and areas of hyperesthesia above the groins, grossly misnamed "ovarian tenderness." These areas of hyperesthesia are sometimes found on both sides of the body; more frequently, however, they are limited to one side of the body, and, curiously enough, like the hemianesthesia, they are found most frequently upon the left side. Areas of hyperesthesia are also frequently found upon the scalp, and here the patch is often so small that it can be covered with a fingertip.

Not infrequently these areas of hyperesthesia become areas of hyperalgesia. The areas are not only tender but they become painful, not only painful to touch, but spontaneously painful. A familiar instance is found in the hyperesthetic area upon the scalp, which, when spontaneously painful, gives rise to severe headache, that form of headache known as *clavus hystericus*. What is true of the hyperesthetic area of the scalp is also true of the hyperesthetic areas about the breast, which when painful give rise to *mastodynia*.

That both *clavus* and *mastodynia* are affections attended with much suffering no one will deny. When the area of hyperesthesia in the inguinal region becomes painful the suffering may be equally great. Owing to the anatomical relation which the inguinal region bears to the ovary this symptom has been greatly misunderstood. As already stated, it has been misnamed ovarian tenderness, and

has been directly attributed to the ovary, and yet there can be no doubt with regard to the nature of this pain, for we must remember that it is quite frequently found in men and also in women in whom the ovaries have been removed, removed sometimes in a vain attempt to relieve this pain. The pain is not ovarian; it should never have been called ovarian. Inguinal tenderness, groin pain, or, as I prefer, inguinodynia, are terms much simpler and in strict accordance with facts. The pain is, as a rule, confined to a limited area, and is found most frequently upon the left side, and is very often associated with a similar, though somewhat larger, areas of tenderness beneath or over the left mammary gland, and it need hardly be said, also, with other definite, well-marked hysterical stigmata. As a rule, it is revealed by careful examination to be superficial and not deep. It is situated in the skin and the tissues of the abdominal wall, and not within the pelvis. I have frequently demonstrated this to be a fact by means of the following procedure:

The painful area having been carefully localized on the abdominal surface, the tip of the forefinger of the right hand is allowed to rest lightly upon it; the left forefinger is then introduced into the vagina and directed upward and to the left until its tip is immediately beneath the tip of the forefinger of the right hand which is upon the abdominal wall. Just as soon as pressure is made between the two fingers, the patient flinches, while the patient does not flinch when pressure is made in other directions or when other portions of the abdominal wall are included. By this means I have succeeded not infrequently in isolating and demonstrating beyond a doubt the site, and therefore the character, of the pain. In some cases, just as in spinal tenderness, the pain radiates and becomes somewhat diffused, but it always radiates from a superficial center in the abdominal wall, and just as there are cases of spinal tenderness in which the tenderness is at one time superficial, and at others deep, so there are cases of inguinal tenderness in which the tenderness seems at times to be deep-seated; but even here, by the procedure I have described, the maximum point of pain can always be isolated and shown to exist in the abdominal tissues. To these considerations we will presently return.

I will not pause to speak of the contracture of the visual fields in hysteria, nor of the reversal of the color fields, as they do not in this evening's discussion directly concern us. They must, however, be borne in mind as affording valuable corroborative evidence of the existence of hysteria. The motor symptoms of hysteria are less

frequently met with than the hysterical sensory disturbances which we have just considered. The motor symptoms consist in brief of paralysis, contracture, tremor, and in incoordination. Motor symptoms so striking as these generally cause the case to be referred to the neurologist rather than to the gynæcologist, and I will therefore not pause to consider them. Similarly with the visceral symptoms, which consist of disturbances of digestion, of the circulation, of the heart, of respiration, of fever, of cough, of loss of voice, of yawning, of phantom tumors, etc. They also are less likely to come before gynæcologists for interpretation, and are so characteristic as to stamp the case at once as hysterical.

The psychic symptoms of hysteria are, however, important for the gynæcologist. There is always some abnormality of the mental faculties in hysteria, more particularly a hyperesthesia and irritability of the affective faculties. The patient is, as a rule, exceedingly impressionable, and reacts inordinately to impressions involving the affective faculties. She is abnormally sensitive to suggestions, especially with regard to her physical condition, and willingly accepts explanations attributing her symptoms to local disease. Not infrequently hysterical symptoms are brought to the surface, or, if present, are made prominent by the ill-considered statements or injudicious interest manifested by the patient's friends. It can be readily seen how doubly injurious under such circumstances incautious statements by a physician, or a pelvic examination, even when the latter yield a negative result, may be. I have on a previous occasion expressed my views concerning this matter as follows: "One can hardly judge of the enormous mental impression a first examination must make upon a young girl, especially if that girl is already hysterical, already neuropathic by heredity and predisposition. Not only is the great evil of the moral shock to be taken into account, but the fact that there is lodged in the patient's mind a more or less vague but fixed belief that she has some mysterious local disease to which she only too willingly agrees to attribute her nervous manifestations. In consequence, she sooner or later insists upon a repetition of the examination or a continuance of the local treatment once begun, and the morbid idea thus implanted becomes hopelessly rooted, never, perhaps, to become displaced." The enormous rôle which the mental condition in hysteria plays must constantly be borne in mind. It is for the reason of this large psychic element that I term hysteria the psycho-neurosis in contra-distinction to neurasthenia, which is properly termed the fatigue neurosis.

The foregoing considerations of neurasthenia and hysteria warrant the following almost self-evident conclusions. First, regarding neurasthenia:

1. That neurasthenia may exist independently of any local disease, pelvic or otherwise.
2. That there is no *necessary* relation between neurasthenia and pelvic disease when the two affections happen to co-exist in the same case.
3. That when pelvic disease occurs in a case of neurasthenia, the pelvic symptoms may be more readily recognized by the patient, and, therefore, become more prominent; because in neurasthenia there is an increased reaction to local impressions, nervous weakness, and nervous irritability going hand in hand.

Secondly, as regards hysteria the conclusions appear to be:

1. That hysteria may exist independently of any local disease, pelvic or otherwise.
2. That there is no relation between pelvic disease and hysteria, even when the two affections co-exist in the same case.
3. That while in hysteria there is increased reaction to external impressions, this reaction is purely psychic. To repeat the words used by me earlier in the evening, in hysteria the patient is exceedingly impressionable and reacts inordinately to impressions involving the affective faculties. This reaction to external impressions differs altogether from that seen in neurasthenia, for in the latter the reaction involves the nervous system as a whole. In hysteria the patient readily accepts the suggestion—often a spontaneous auto-suggestion—of pelvic disease, especially as groin pain or inguino-dynia is so common a symptom of hysteria.
4. That the pain areas of hysteria bear no relation to disease of the deeper structures.

How shall we apply these conclusions to questions of pelvic surgery?

First, all idea of curing neurasthenia or hysteria by operations upon the pelvic organs must be absolutely abandoned. Happily the day has almost gone by when such operations are attempted. Healthy organs are no longer removed in the vain and grotesque attempt to relieve the symptoms of the neuroses.

Second, when confronted with pelvic lesions occurring in women presenting nervous phenomena, the surgeon should bear in mind that there are, leaving out the insanities, three groups of nervous symptoms which such patients may present; first, those of neuras-

thenia; secondly, those of hysteria, and thirdly, those directly due to and symptomatic of pelvic disease.

The symptoms of neurasthenia and of hysteria we have already considered. Those of the third group, those symptomatic of and directly due to pelvic disease are admittedly small in number. They consist of pains within the pelvis itself, pains referred to the lower portion of the back, to the sacrum, to the hips or thighs, and very rarely of sacral neuralgia and pain in the sciatic distribution.

It is important for the surgeon to keep these three groups of symptoms clearly separated in his mind and to remember that when pelvic disease complicates a case of neurasthenia or hysteria, he cannot hope by operation to remove the symptoms characteristic of the neuroses, but only those symptoms properly belonging to the pelvic disease itself; and his operation should never be undertaken for any other purpose. To state the truth in other words, the surgeon should operate for the pelvic condition itself. For instance, if he operates on a tear of the perineum, he does so because the tear has resulted in mechanical difficulties—because it has given rise to a displacement of the uterus or perhaps to a rectocele, not because the tear occurs in a neurasthenic or hysterical woman. If he removes an ovary it is because the ovary is unmistakably diseased. If he removes an appendix, it is because the characteristic symptoms of appendicitis are present, and not because the patient suffers from neurasthenia or hysteria. If he sews fast a movable kidney, he does so because the mobility of the organ is such as to threaten mechanical obstruction of the ureter with its consequent hydronephrosis of the kidney, or because the patient suffers from irregularly recurring attacks of gastro-intestinal cramp directly dependent upon the abnormal mobility of the organ, and not because the patient suffers from neurasthenia or hysteria.

Admitting the correctness of this position, the surgeon should approach cases of neurasthenia and cases of hysteria somewhat differently. Contrary to what might, perhaps, be inferred from the general tenor of my remarks, I believe that in neurasthenia operations for the cure of actual pelvic lesions are indicated and should, other things equal, be performed. We remember that in neurasthenia there is added to nervous weakness, nervous irritability; that there is an increased reaction to local impressions, and I maintain that it is just as proper and just as clearly indicated to correct local pelvic disease in neurasthenic patients as it is to give such patients glasses to relieve their ocular symptoms. It is important, however,

in considering operations upon neurasthenics to bear in mind that these points are excessively sensitive to nervous shock. All gynaecologists are aware of the persistent nervous symptoms—the persistent surgical neurasthenia that ensues now and then after pelvic operations in otherwise healthy people. If such operations be undertaken upon persons already neurasthenic, great harm may be done. Therefore, if in a case requiring pelvic operation neurasthenia be present in any degree (provided, of course, that the operation be not urgently indicated for surgical reasons) I believe that the patient always does better if the operation be preceded by a period of rest, forced feeding, bathing, massage, etc.; in other words, by some form of rest treatment, or, as I prefer to term it, physiological treatment, adapted to the case. It is my own plan to disregard the pelvic lesions (unless these be urgent) of neurasthenic patients until, by a proper course of treatment, the nervous features have been eliminated, then to call in a surgeon and if, in the opinion of the latter, an operation is indicated, to have the operation performed.

If the patient instead of being neurasthenic be hysterical, a similar plan should be adopted. We should first treat the hysteria, and then, if necessary, submit the patient to operation. If the hysteria be very profound, however, operation, I am convinced, should never be undertaken unless the surgical indications are urgent and of such a character as are necessary to save life. I have in more than one instance seen an otherwise curable case of hysteria converted into a hopeless and incurable one by an injudicious operation. It is in my experience a recurrent observation that women suffering from pronounced hysteria, who are submitted to operation, return to the surgeon complaining of additional pelvic troubles and are again submitted to operation, and this cycle may be repeated a number of times. I recall one case in which a woman at first had both ovaries removed; subsequently, because her nymphæ were rather large and projected beyond the labia majora, she ascribed all of her troubles to them and at her solicitation they were amputated. Subsequently to this she ascribed all of her troubles to her rectum, and finally the sphincter was cut. Some time after this she came under my care and almost immediately begged me to examine the rectum, asserting that she was sure that a further operation was required. It is needless to say that by this time her hysteria had degenerated into a true psychosis and she proved to be hopelessly incurable. I mention the case because it is not impossible that some of the members of the Obstetrical Society can duplicate this experience. We should re-

member that in hysteria the psychic make-up of the individual is always profoundly involved; that there is (as I have already expressed it) an inordinate reaction to impressions involving the affective faculties—an inordinate susceptibility to suggestion. In reply to the statement that may be made that operations upon hysterical women sometimes cure the hysteria by suggestion, I answer that it has not been my fortune to witness such a result.

I have already trespassed on the time of the Society or I should be glad to make some remarks on the relations between pelvic disease and the insanities, but the line of thought that I have pursued in considering the great neuroses indicate, in a large measure, my general point of view.

A METHOD OF VAGINAL ABLATION IN PUS CASES.*

BY W. R. PRYOR, M.D.

MR. PRESIDENT AND FELLOWS: It is my turn to address you upon some subject of interest to you and bearing upon our special line of work; and although this opportunity comes to each of us but once in years, and is therefore a marked distinction, I am at a loss for a subject fitting the occasion and your consideration. Actively engaged as we all are in practical work, those obtruse problems which puzzle and yet fascinate us require too much time in solving, and we must leave their solution to our German, French, and Italian brethren. Forced by lack of experience in experimental work and embarrassed by the necessity of telling you something which you already know, I must detail to you an operation based upon personal experience in order to even prompt a discussion.

It is now a little over five years since I became struck with the difficulties met in removing through the vagina the adherent uterus *en masse* with the adnexa, and it is three years since I adopted a method which I believe overcomes many of them. The preservation of the organ as a whole was desirable only because a pretty specimen would be spoiled by not doing it, and a method of removing it seemed necessary which would always be complete, which could be uniformly applied, which would leave all stumps in the vagina, and which would be almost free from risk, both immediate and remote. I became convinced that an active bleeding persisting

* Read before the New York Obstetrical Society, May 10, 1898.

for fifteen or twenty minutes with but partial narcosis was better than a long-continued, profound narcosis, with persistent, even though parenchymatous, bleeding. Whenever I determine to remove the uterus and adnexa through the vagina, malignant cases *always* and fibroid cases *sometimes* excepted, I operate as follows:

The propriety of ablation having been demonstrated, the cul-de-sac is opened if this has not previously been done.

The intra-uterine traction-forceps are inserted, and dissection of the bladder from the cervix is effected. When the uterus is firmly held by these it is an easy matter to differentiate the loose pericervical tissue from the uterine, and by rotating the uterus as the dissection progresses, the separation is made well out to the sides of the uterus. When the bladder has been dissected from the uterus I introduce a finger and carefully push the lateral bladder-tissues from the uterus. Then the left index is passed into the posterior cul-de-sac and made to pass along the center of the posterior surface of the uterus, severing all adhesions in its way. No attempt is made to generally free the adnexa, as time would be but wasted. At this stage there are used two retractors—a long Jackson posteriorly and a short one anteriorly.

Two bullet-forceps are made to grasp the sides of the cervix and the intra-uterine forceps are removed. While holding up the bladder the blunt scissors are introduced into the cervix and the uterus split up the middle line as far as the anterior wall can be seen. Rotating the bullet-forceps outward, the cut edges are made to evert, and at the angle of their juncture two French traction-forceps are fastened. Down-traction on these will cause the uterus to still further descend from beneath the bladder so that another section of the anterior wall may be made. If descent of the uterus be hard to obtain, the posterior lip of the cervix may also be split up above the level of the internal os. Although I never completely circle the cervix with my incision, preferring to leave a strip of mucous membrane upon each side one-eighth of an inch in width, I find I gain abundance of room in all cases. So soon as I have severed the fundus uteri, or when the cornua uteri appear (they are consecutive events) I remove the posterior retractor, and under the guidance of the fingers I introduce this "retracting director." This is so curved that an assistant holding it properly can depress the perineum and at the same time pull the uterus forward. The small Jackson retractor holding up the bladder reveals the groove in this director. Into this groove a special bistoury is inserted and the uterus is split

into two actual halves. The grooved retractor is now withdrawn. No retractors are in place.

One-half of the uterus, held by one pair of bullet-forceps and one pair of French traction-forceps, is shoved up into the pelvis. Into the space left by this two or three fingers are inserted, while the other half of the uterus is drawn toward the vulva. It will at once become apparent that separation of the adnexa from behind the broad ligament becomes now easy. When this is effected the adnexa are drawn forward by a pair of Luer's forceps and held while the *first pair* of hysterectomy-forceps are applied to the *ovarian artery* from above downward. After the tissues have been severed to the points of these, others are applied to the uterine artery. These latter may be put on either from above or from below, as is most convenient. One-half of the uterus and its adnexa are then cut away. The tissues on the other side are similarly treated. Rarely do I use more than four pairs of forceps. Having removed the diseased organs, the anterior and posterior retractors are inserted and gauze pads shoved up above the forceps. The table is tilted into Trendelenburg's position and a careful inspection of the stumps is made. Everything being satisfactory, I introduce a pelvic Mikulicz dressing, lower the patient into the horizontal position, and introduce a stationary catheter.

This is the usual and typical method of operating. It is applicable to fibroid uteri when they are reduced to a length less than seven inches or to a diameter and length appropriate to the pericervical ring. Since using it I have not had to resort to morcellation in any pus case, and have always been able to make my operations complete.

This I consider the operation of election. It is unnecessary to attempt to remove the uterus whole or to morcellate it. In a certain number of cases in which either operation is begun, hemisection must be resorted to; and in all cases in which hemisection is performed it will be found that the operation will proceed more satisfactorily than if another method were attempted. The instruments shown I have found to facilitate my work. Instead of complicating the technique they really simplify it, and in no way approach that machinery in surgery which so disgusts the true surgeon.

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EDITORIAL.

THE AMERICAN MEDICAL PRESS.

The average busy practitioner—and even he who is not so blessed—rarely gives a thought to the Medical Press of this country, to what it is, to what it costs in effort and money, to the immense power for good which lies latent in it and for the progress or deterioration of which he alone is directly responsible. If he thinks of it at all, he soon dismisses it as a necessity—agreeable or otherwise as he happens to be fond of his profession or is merely a money-grabber—for which he pays or expects to pay in the very distant future. A short dissertation on this subject, therefore, will be a very profitable employment of time to most of our esteemed readers and will be the medium of information upon a topic than which none can be of greater interest, because this touches most closely the physician himself in his reputation and in his capacity and the opportunity for earning his daily bread. For the medical press is what its subscribers make it. It is a lever of mighty power—“a lever to move the world”—and its significance to the profession is whether the handle of this lever is controlled by the profession or whether the profession rests upon the short end and the long end is held in the hands of those who know its value and have so long exploited it. The value of the press to us—and who will deny its potential might?—lies in its control, its universal and absolute control, by ourselves, by medical men who are bound by professional obligations, by that common interest which binds us all, that remnant of medical ethical feeling which,

notwithstanding the stupendous and blind selfishness of the individual practitioner, is still powerful enough to define our conduct, each to all and all to each, within certain fixed limits. Encourage with your support such a press, make it an accomplished fact by subscribing and *promptly paying your subscriptions*, and you need not doubt that the editors and medical proprietors will unite and act together for the common good. Medical editors know very well that a powerful press must be a united press and must equally represent a powerful and united body of men, *i. e.*, the profession; for if we editors had universal influence and our written words the convincing force of a Cicero and a Demosthenes, of what avail if the profession which we represented and for which we spoke remained disrupted, weak and incapable of self-government and the use of power? The profession and its press are indissolubly united for good or evil. Reform your press and it will in turn reform and unite you. Support and encourage medical proprietorship in your journalism—not by platonic good wishes but by your *exclusive* patronage and by your money and you will find the lever of a mighty press for use at your hand. Encourage, by your selfish indifference to everything which may benefit others as well as your individual self, journalistic proprietorship by lay publishing houses and your medical press will continue, as it has hitherto done, to *use you*.

When this JOURNAL first entered the field, something more than six years ago, it was almost the only first-class Journal owned and edited by a professional man in this country; to-day there are probably a dozen or more in this category. We doubt not that at least a majority of these medical proprietors and editors are actuated by singleness of purpose to work for the good of the profession, to create a great press and that they are sustained by the hope that the profession will one day recognize practically the honesty of their purpose and its self-sacrifice. Do you fancy that all these journals are supported by the profession? Does that fatuous thought, perchance, cross the mind of the subscriber who throws his bill aside to be paid in a year or two? Does that contributor also believe this who sends his article to be published by some lay medical journal rather than by one owned by a medical man, not because the former is better or has a larger circulation (thank God, that excuse will not hold to-day) but because he thinks he can get a longer subscription credit and better terms for new medical books?

Remember this: If you wish this movement toward bringing the medical press under medical control to succeed, *you must not expect*

credit; you must pay your subscriptions in advance. You must make up your mind to that sacrifice for the sake of the great good to be obtained. Medical proprietors have not large capital behind them; *you must supply the capital to work with.* After all, you are only expected to pay for what you receive and we say, without a moment's hesitation, in the case of every journal for which you may have subscribed, you get your money's worth and more. If, on the other hand, you have no sympathy with the struggles of these medical men to give you a medical press which you yourselves shall own and whose policy shall always be dictated by your interests, if you prefer your press to remain always merely a grab-bag from which you will have the privilege, as you wish, to draw out a more or less interesting original article or society proceeding, you can accomplish this end without exertion. It is only necessary to neglect to pay your subscription. You will force, in this gentle and easy manner, every medical proprietor out of the journalistic field and you will hand over the medical press absolutely to the great lay publishing houses who do not expect you to support their journals, which are not published in your interests but as advertising mediums for their other publications.

It is this uneven fight which we editors are fighting and the question at stake is whether the profession, to which we belong and in whose interests we work, mean to aid us or to turn aside. After all, it is for you, the profession, not for us; for we venture to say, there is not one medical proprietor in this country who could not earn more at his profession, with half the labor expended in journalism, than he could ever expect from the most generous support his subscribers could give him. The decision and the responsibility lie with you. It is easy (for the individual sacrifice is not great) to create a great American Medical Press under medical control. It is easier still to place it back again, where for so many years it remained—on a plane of mediocrity and in the hands of lay publishing houses.

JUSTICE TO *THE JOURNAL OF THE AMERICAN
MEDICAL ASSOCIATION.*

It is with extreme satisfaction that we call the attention of our readers to the denial and refutation by the *Journal of the American Medical Association* of the charge that it had accepted an advertisement of a popular nostrum, yclept "Ripans Tabules."

The name of this journal was printed among others in a list of publications which had accepted this advertisement. The list was not original with ourselves; we copied it from the columns of a contemporary of excellent standing, after an interval.

We were shocked at the time that a journal which stood, as did that of the American Medical Association, manifestly for the profession, was owned and edited by medical men, should have succumbed to so dishonorable a temptation. But the charge was so open and precise and the letter of acceptance brazenly published by the Ripans Chemical Company was a *prima facie* evidence of guilt so strong that we cannot even now blame ourselves for believing, on such evidence, what every body else believed.

We never imagined that these nostrum-venders would dare to make the *Journal of the American Medical Association* the victim of a forgery. This is so clearly an indictable offense and so certain of detection that we would not have believed that so-called business men could have been such fools.

The *Journal of the American Medical Association* says that this letter of acceptance was a "clumsy forgery." That it was a forgery we believe because that journal says it was and the Journal will undoubtedly obtain belief, on its reputation, from every honorable man in the profession. But it is not enough, in our opinion, that the Journal denies and its denial is accepted by its medical contemporaries. The charge was made by the Ripans Chemical Company and circulars sent by it throughout the country. This business house has never retracted the charge, to our knowledge, and if it or its agents were guilty of libel and forgery, as the Journal states and we believe, it is manifestly the duty of the Journal, its duty to itself, to the profession and to medical journalism, of the best of which it is a conspicuous example, to prosecute its defamers and obtain a warning vindication of its honor from the law. If a journal so closely in touch with the profession and directly representative of one of the most prominent bodies of medical men may with impunity be libelled, be made the victim of a forgery by any business concern which so desires, no journal in this country and the reputation of no medical man, however prominent, are safe.

We expect, therefore, that the *Journal of the American Medical Association* will, with only necessary delay, bring an action at law against this company and obtain a judgment which will be a lasting boon to the profession and help in the advancement of American medical journalism to an inestimable degree.

CORRESPONDENCE.

PHILADELPHIA, July 14, 1898.

To the Editor of the American Gynæcological and Obstetrical Journal:

SIR: Will you very kindly place the following in the columns of your esteemed JOURNAL, so as to give it the necessary publicity that its importance demands:

JOSEPH O'DWYER: A SPECIAL COMMITTEE TO COMMEMORATE HIS
NAME.

At the meeting of the Section on Diseases of Children of the American Medical Association, held at Denver, Col., July 7-10, 1898: It was moved and carried unanimously that a "Memorial Committee" be appointed to commemorate the late Joseph O'Dwyer, with suitable powers, etc., to collect such moneys, and to act with other bodies for the same purpose. The committee is composed of the following: Dr. Louis Fischer, New York, Chairman; Dr. J. P. Crozer Griffith, Philadelphia; Dr. F. E. Waxham, Denver, Col.

By so doing you will much oblige,

EDWIN ROSENTHAL,
Secretary of the Section at this Session.

GYNÆCOLOGICAL NOTES FROM PARIS.

PARIS, June, 1898.

To the Editor of the American Gynæcological and Obstetrical Journal:

SIR: As chance would have it I found myself first at the clinic of Apostoli, who has attained such world-wide celebrity by his successful application of electricity to gynæcological therapeutics. Although his office is still at 5 Rue Molière near the Avenue de l'Opera he has removed his clinic from its former dingy surroundings in the Rue des Jans to a much larger and more suitable place at 15 Rue Montmartre. Since my last visit here twelve years ago his views have changed but little. Most of what I wrote in my letters from Paris at that time is still true. I was greatly interested to see his splendid outfit of instruments and apparatus, and the honest and painstaking manner in which the records of his cases are kept; and I could not but be impressed each time that I visited his magnificent

waiting-rooms by seeing them filled with the highest class of patients from so many different countries. His method must have some virtue in it to have stood the test of so many years. At his clinic he has three salaried assistants constantly taking histories and giving treatment, so that now he has more than 5000 cases, all carefully, and many of them most minutely, recorded. His clinic costs him personally over \$3000 a year. Although he still uses the constant galvanic current for the symptomatic cure of fibroids and the fine faradic current for pelvic pain, he has added two other elements to his installation. One, the static current, obtained from a Roltz machine and the other, the Tesla current, of very high tension and high frequency. The static current is given in the form of showers or sparks, while the Tesla current is applied as the patient is reclining on a sofa or sitting within a solenoid or cage, the current passing all around him. Want of space prevents me from describing these currents more fully, so I must be content with a summary of my observations:

1. Apostoli does not treat surgical cases with electricity. Each time that I attended his clinic I saw case after case sent to the surgeon because these cases had either disease of the appendages or cancer of the uterus, neither of which he claims to cure by electricity. He wishes it to be distinctly understood, therefore, that electricity is an ally and not a rival of surgical treatment.

2. If I had any doubt, which I have not, as to the great value of electricity as a diagnostic agent in gynæcology, it would have been dissipated by what I saw at Apostoli's clinic. As the cases were brought before him, the assistants reported that in several of them there was intolerance of even small doses of 40 or 50 milliamperes. Apostoli invited me to investigate them carefully with him, and by the aid of the clinical history and the physical examination I would have suspected diseased appendages in some and cancer in others. With the intolerance of electricity added, Apostoli felt so certain of the diagnosis that he then and there sent them to the surgeon for operation. He was much interested in a case of my own bearing upon the diagnostic value of electricity. A young woman who had been treated by three physicians with electricity for a large fibroid tumor of the uterus, was rendered worse each time. Guided by Apostoli's advice I suspected pus-tubes, and on performing laparotomy I found that what was thought to be a fibroid was a collection of four enormous abscesses of the two tubes and ovaries.

3. I saw demonstrated the important place occupied by the elec-

trical treatment of ovarian pain, for which, so far, neither medicine nor surgery have proven very effective. And yet no other word than magical would impress the effect of the *static* spark on tender ovaries. Cases which could not endure firm pressure on the ovarian region without crying out, declared after two or three minutes of application of the static sparks, that the same pressure caused them no discomfort whatever. Some of these patients were seen for the first time while I was there and did not leave my sight for a moment, nor was a word spoken to them until the effect was produced, so that they did not know what was being done nor what was the effect expected. I cannot say how long the relief lasted, but Apostoli assured me that many cases, even including those suffering from ovarian pain after removal of the ovaries, had been completely cured by this treatment, which, he tells me, has taken the place of the current from the long, fine faradic coil.

Pozzi, with whom I had the pleasure of spending a morning at the Broca Hospital, is one of the most striking figures of the profession in Paris. Like our own Sir William Kingston, he is a Senator and a Knight (of the Legion of Honor), and he is also a full professor of the University. He is a tremendous worker, his book on gynecology being one of the most complete that has ever appeared. I was always puzzled to know how he managed to find the time to write such a work and on expressing my curiosity he told me that he obtained leave of absence from the University and from the Hospital, and, taking many cases of note-books and monographs with him, went to Montpellier, where he shut himself up like a hermit for two years, writing for fifteen hours a day. I saw him do an abdominal hysterectomy, during which, in order to give himself more room to work, he first split open the fundus and enucleated a large, hard fibroid by screwing a specially made corkscrew into it. The remainder of the operation was exceedingly simple, because, relieved of its load, the uterus was easily lifted out, including the cervix, and the six arteries ligatured individually with catgut, and the peritoneum closed. As far as I could learn vaginal hysterectomy is gradually being abandoned in France, where it had its greatest stronghold, and Howard Kelly's method of abdominal hysterectomy is gradually taking its place. Pozzi is getting the City Council of Paris to build a \$100,000 operating-theater and laparotomy pavilion. It will be without wood, being marble and cement throughout, so that each day it may be washed with a stream of bichlorid solution with the hose.

Segond is next in seniority to *Pozzi* and is about forty-eight years of age. He is a man of great force of character and is making a marked impression on the progress of gynæcology in France. He was a strong advocate of vaginal morcellation of the uterus for pustules, fibroid tumors, and all conditions in which both tubes and ovaries had to be removed. While visiting America a year ago he performed this operation eleven times before large assemblages of gynæcologists, and he did them so elegantly and quickly that he elicited the admiration of all who saw him operate. But though he came to show American surgeons what could be done with vaginal hysterectomy, they in turn showed him what they could do by the abdominal method with the result *Segond* became converted by those whom he came to convert, and ever since his return he has become so strong in his advocacy of *Kelly's* method as to carry all before him. They all, however, still remove the cervix, even when there is no suspicion of malignancy, their sole object being to obtain vaginal drainage, which they think was the strong point leading to their great success in the vaginal method. In this I think they are mistaken, as it adds very much to the time required for the operation, several whom I saw doing it taking more time to arrest the vaginal hemorrhage than was required for the ligation of the six arteries and the removal of the tumor. Moreover, I think it important to leave the *healthy* cervix to avoid shortening of the vagina, and as a rule there is so little to drain that it hardly justifies the opening of the vagina. *Segond* is a great admirer of everything American, and he told the large staff present that the finest hospital he had ever seen was the Royal Victoria at Montreal, and in his writings, which are very forcible and convincing in their style, he loses no opportunity of praising the skill of American gynæcologists. I saw him doing an abdominal hysterectomy for cancer of the uterus in which he also removed the upper part of the vagina which was affected; he had great difficulty in stopping the bleeding. He admitted on my inquiring, that his experience with hysterectomy for cancer was very discouraging; so I suppose they have the same difficulty to contend with in France as we have, namely, the cases come too late. The above case was at the Salpêtrière; the next one was at the Bandelogue, where I saw him remove a papilloma of the ovary with secondary grafts on the peritoneum and ascites. After removing the disease he placed a drainage-tube and gauze packing on account of the profuse oozing. He recognized the fact that gauze packing keeps in secretions, but does not drain

them. The third case I saw Segond doing was at a private hospital kept by the nuns, where he removed one tube and ovary from a young lady, but he admitted that it did not give very satisfactory results as he had often to operate upon them again.

Richelot, as far as I could learn comes next to Segond. I saw him operating at the St. Louis hospital, the dirtiest looking old barracks, internally, that I have ever seen. As this was probably not his fault I felt very sorry for him. I called upon him at his elegant private house, 32 Rue Panthievre, and, although he was crowded with patients, he received me most kindly and made an appointment for the next day. Everything during the operation was rigorously aseptic, which of course is the principal thing; but any stranger seeing *only* that hospital would have a very bad opinion of French hospitals. I was glad that it happened to be a vaginal hysterectomy for disease of both appendages, pus-tubes, for that is his forte. He performed the operation beautifully in about the same time as we would take to remove them by the abdomen. They claim here that the uterus should always be removed when both ovaries are taken away. I also saw him perform a Schroeder operation, using a needle on a handle to pass the sutures. He did not, like Martin of Berlin, pass a preliminary suture on each side to control hemorrhage. At all the hospitals the feet and legs of the patients are bandaged up in a thick layer of cotton well sterilized, an example worth following, as it helps to keep up the bodily temperature. To close the abdomen Segond uses through-and-through silver wire, Bouilly through-and-through silkworm gut, and Pozzi three layers, two of buried catgut and one of superficial silkworm gut. *Doyers* is said to be the equal of any, but he did not operate while I was in Paris. *Bouilly* operates beautifully at the Cochin hospital. *Tuppier* is a rising man. My next letter will be from Berlin.

BY A. LAPHORN SMITH, B. A., M. D.

Montreal, Can.

TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

Stated Meeting, May 5, 1898.

The *Vice-President*, H. M. FISHER, M.D., in the Chair.*Two Cases of Tubal Pregnancy.*

Dr. GEORGE M. BOYD: I have two specimens of some interest—specimens of tubal pregnancy—demonstrating somewhat the difficulty of diagnosis and of interest also in reference to the method of operating in this class of cases.

The specimens have been kept in formalin solution and have changed materially in character since the operation. The first specimen is from a patient, Mrs. S., 27, married eleven months; the early history is uneventful, she had the usual diseases of childhood, and menstruation began at the seventeenth year, was irregular, and painful periods, ceasing for some months before reaching the age of 22. At the twenty-fourth year she had great pain and soreness over the ovarian region, lasting eight weeks; she was confined to bed two weeks, and discharged pus from vagina; condition pronounced inflammatory. She was admitted to the hospital in February (the 7th), with a history of having had a possible fibroid tumor.

In December, two months prior to her admission to the Lying-In Charity, she was taken with a pain and hemorrhage, the symptoms of ruptured tubal pregnancy, and remained in bed, one day better, the next worse, and her condition becoming more and more grave, until finally she was sent to the Charity with the above diagnosis. The patient upon admission to the hospital was in an extremely weak and exhausted condition, and upon internal examination the pelvis was found to be filled with an inflammatory mass, the cervix was high up against the pubis and posterior to the cervix, a mass was felt bulging to the vagina, extending to the right side of pelvis about the size of third month of pregnancy. The patient was septic. Because of our inability to get a clear history of the case the diagnosis was reserved to the time of operation.

The patient was operated on one week after admission to the hospital. In the meantime she had an elevation of temperature, and at

the operation revealed an old tubal pregnancy, the pelvis filled up with extensive adhesions and the right tube very much enlarged, the seat of an ectopic gestation. After breaking up extensive adhesions, the right Fallopian tube was removed. In addition to this upon the opposite side, filling up the pelvis, was found a large, partly organized, and encapsulated clot. The adhesions were extensive, and with the breaking of them there followed considerable oozing. This was finally checked, a drainage-tube was placed, and the wound closed. Twenty-four hours after the operation the drainage-tube was removed and the patient finally made a complete recovery. The examination of the specimen showed that it was the usual form of ectopic tubal pregnancy, the Bland-Sutton tubal abortion.

The second case presents about the same history. She was admitted one week after the first case, and the history is as follows: Mrs. C., 28, a multipara, was admitted to the Lying-In Charity February 15th. This patient, for two months prior to her admission to the hospital, had been ill under the care of a physician, with a not clear history of ectopic gestation.

Upon admission to the hospital eight weeks after primary rupture of tube, it was found that she was septic. She had elevation of temperature; the pelvis on internal examination was found to be filled generally with an inflammatory mass, the uterus and the whole lower pelvis, everything, was matted together by inflammatory adhesions. This patient was operated upon two or three days after her admission to the hospital. On opening the abdomen free hemorrhage with extensive adhesions were present. The omentum was bound down firmly; it was necessary to break up these adhesions, and after freeing the omentum the small intestine was found to be adherent to the mass occupying the pelvis; after a careful dissection the intestinal adhesions were broken up. Finally, after an extensive dissection, difficult to make because of the extent of the inflammation, the right tube was liberated, it was found enormously distended and enlarged. In this second case we also found a large, partly organized clot. The one case resembled the other in many respects.

I have presented these specimens chiefly for the purpose of bringing out, if possible, a discussion of the means or method of diagnosing late tubal abortion and the best method of operating in these cases.

Tubal pregnancy can be diagnosed with comparative ease if the case present itself early, or about the time of rupture, but when the cases are seen late, two or three months after the primary rupture,

the diagnosis is often difficult. The important symptom at the time of rupture is intense pain in the region of one or other ovary and hemorrhage, which may be more or less extensive. Cases in which the primary rupture is not accompanied with hemorrhage sufficient to cause death we find later present a variety of local symptoms dependent upon the extent of hemorrhage and presence of blood-clots which Nature is attempting to absorb. If the hemorrhage is only slight it will be in time probably completely absorbed, but when it is greater in amount it is more of a task for Nature to accomplish, and after absorption of the blood-serum we find left large coagula which undergo various changes. First, Nature attempts to shut off the blood-clot from the general peritoneal cavity and then attempts the excapsulating of the mass. With this we find that in some cases the clot becomes organized more and more, reducing its size and giving rise also to symptoms of pressure, of vesical irritation and bowel constipation, and difficulty in defecation, or else in certain cases we find the cloths become disorganized and the patient becoming septic. While pain is the most reliable symptom in early tubal pregnancy, in those cases seen two or three months after rupture, the most constant symptom seems to be a slight continuous bleeding resembling very much the hemorrhage we have in incomplete abortion.

I have reported these cases briefly, hoping to bringing out a discussion on *First*, as to the best method and the difficulty of diagnosing ectopic gestation; and *Second*, the best method of operating in these cases. In the late cases it seems to me it is impossible to attack the trouble from the vagina. In both of these cases an operation per vaginam would have only resulted in an incomplete procedure.

DISCUSSION.

Dr. R. C. NORRIS: I can scarcely add anything to what Dr. Boyd has said, but in response to your invitation to open the discussion, will remark that so far as the diagnosis of tubal pregnancy is concerned, there are two symptoms I find in some cases that Dr. Boyd did not mention: one is the evidence of pressure as shown by pain along the thigh, which I have found quite a constant symptom in some cases, and the other is an elevation of temperature, a moderate fever, doubtless due to attempt at absorption of the effused blood in the peritoneal cavity. One case I recall to mind where the diagnosis was somewhat difficult, a case in which a woman had an early

abortion coincident with a tubal pregnancy. I think sometimes it is also absolutely impossible to make a differential diagnosis between tubal pregnancy and abortion in consequence of pyosalpinx. When we come to actually making a diagnosis, oftentimes, with a mental reservation in favor of extra-uterine pregnancy, the abdomen is opened and we are confronted with pyosalpinx. Fortunately, as every operator knows, the actual diagnosis is not of such great importance, since the treatment in either case would be the same, so far as treatment is concerned, as to whether the abdominal or the vaginal route is to be selected. I believe the abdominal route will in all cases be the preferable route, except in cases of large hemocele that may have remained a long time after rupture, when simple puncture of the vaginal wall and drainage will be sufficient. To operate by the vagina at an early period will sometimes court difficulty and danger. During my recent vacation I had an opportunity to see a vaginal operation for a relatively recent case of extra-uterine pregnancy, which turned out to be such a case as the one Dr. Boyd refers to, that is, tubal abortion. The operator made his diagnosis, discoursed at length upon the great advantage of the vaginal route in such cases and the great ease one has to conserve the sound ovary and tube, and the short rest in bed which would follow the vaginal operation. The anterior cul-de-sac was opened, the tube and ovary of the side involved was enucleated, ligated, and removed. During the manipulation sufficient force had been used to tear the broad ligament at some point not controlled by the ligature, furious hemorrhage ensued, compelling the operator to complete the operation by hysterectomy, which destroyed the uterus as well as both tubes and ovaries. Unless a man is a very expert vaginal operator it seems to me that the abdominal route will always be desirable. I can only say in conclusion that the diagnosis will oftentimes be obscure, oftentimes uncertain, and unless a man has a wide experience in operating by the vaginal route, I should think the abdominal route preferable.

Dr. G. I. MCKELWAY: As to the diagnosis of ruptured tubal pregnancy some days after rupture, excepting from the history, I don't believe it is possible in the majority of cases. Examination reveals a mass in the pelvis, just what that mass is, excepting from the history, no man can tell. A member of this Society, who has said more things, wise and otherwise, than any other member of it, was asked once in a case what he was going to find when he opened the abdomen, he said, "One of fourteen things," and I think in our

cases of ruptured tubal pregnancy, in which the rupture has occurred some long time before, unless we have a clear history and base our diagnosis largely upon that history, we are not able to diagnosticate precisely the condition. And it does not always do to be led by the history. I saw a lady in my office yesterday, a young unmarried girl who, while visiting a sister in the South, was one day during a menstrual period seized with sudden pain, fell to the floor, complained of great agony on the right side low down, was faint, nauseated, with many of the symptoms of shock, and was in bed for some days. She then had another attack quite similar to the first. The physician who saw her was not a surgeon, and simply prescribed palliative measures for her pain. Afterward she saw a surgeon who made a rectal examination and found a large mass filling up the pelvis. He opened through the vagina and evacuated a large quantity, not of blood, but of pus, washed out and packed the cavity and after some months of washing and packing, the girl became sufficiently well to come home. In my belief she had appendicitis, first, with a sudden attack, and second with rupture and formation of pus, which was evacuated through the vaginal incision. Her tubes and ovaries had nothing to do with her condition. They were not disturbed and were and are normal and healthy.

I had a case of ruptured tubal pregnancy a few weeks ago of much interest. An insane woman was sent to me to have her cervix repaired. Very little was known of her history, except that she had not been living with her husband for four months, that during that time she had been in an apathetic, melancholic condition, speaking to nobody, and part of it had been subjected to forced feeding, etc. In the hope that the repair of her cervix would be of help to her she had been sent to me by her physician.

On examination I found a large mass in the pelvis. Instead of repairing her cervix, which was but very triflingly lacerated, I opened her abdomen and removed the specimen which I show you to-night. I found a large, dense mass held in by a wall of exudate, just such a condition as you would expect to find in an old pyosalpinx. I broke through the wall and instead of finding a collection of pus, found clear fluid, and, floating free in it, this sac, which was about the size of a hickory nut and contained this exceedingly small ovum, which is about the size of a grain of pop-corn. On the plate one is able to make out positively that it is an ovum, otherwise one would scarcely believe the identity of a specimen so small. The case had been a ruptured tubal pregnancy, and precisely the same change

had taken place, probably, in the liquid in the pelvis that takes place when a pyosalpinx becomes a hydrosalpinx. Bland Sutton states that hydrosalpinx is a condition secondary to pyosalpinx. I believe the clear fluid was the liquor puris of an old pus collection in the pelvis, resulting from a neglected ruptured tubal pregnancy which must have occurred some months before.

Dr. BENJAMIN: The difficulty of diagnosis in these cases was well illustrated in a case that was sent to me by some of my professional brethren (who are good diagnosticians) to be operated upon for tubal pregnancy. The symptoms were such as would characterize a case of tubal pregnancy that had burst, probably in the third month. A mass was found in the region of the left Fallopian tube. The pain had been quite severe. On making an abdominal section I found an *appendicitis*, a long appendix extending clear down, had opened at the end and set up inflammation, and was adherent to the ovary, great inflammation had taken place in the right side of the pelvis, and in addition there was an old pyosalpinx. The tube and ovary was removed on that side and the appendix removed close to the cæcum. The patient made a good recovery. In that case an attempt to operate by the vagina would certainly have resulted in failure to cure the patient.

Dr. JOHN C. DACOSTA: Dr. Norris has spoken so clearly about the dangers of the vaginal route in cases of extra-uterine pregnancy that little or nothing can be added to it. Dr. Boyd was kind enough to ask me to see this second case that he quoted. He had spoken to me about it before he operated, and we came to the conclusion that it was probably a case of extra-uterine pregnancy. The operation was such that if he had attempted to remove it by the vagina he would have had a dead woman before he could have got the mass away, there were adhesions, masses of blood, everything was adherent. When they talk of operation by the vaginal route for extra-uterine pregnancy, and we hear of leaking of blood-vessels, and the abdomen having to be opened to finish operation; when we consider how important these blood-vessels are in pregnancy, whether uterine or extra-uterine, how liable they are to tear or bleed, I think a man takes a great risk when he attempts to remove extra-uterine pregnancy by vagina. An old Scotch surgeon's saying comes to my mind, when his assistant put his fingers over the spurting blood-vessel, "Take your fingers away, mon, until I see where the blood comes from," so you want to do in an extra-uterine pregnancy, if you don't know where the blood is coming from. I do not know anything

more difficult to make surely than the diagnosis of extra-uterine pregnancy in the first two or three months. Scarcely any operator but has been deceived again and again. I was called in consultation last week by a man who is an expert operator (I imagine he has done 150 to 200 coeliotomies), who asked me to see a case and say whether it was an extra-uterine pregnancy. That woman's menstruation had been perfectly regular until December, then menstruation stopped, and about the 1st of March irregular bleeding began. There was a steadily growing mass in the pelvis. This woman told me that she had had a short time before this intense pelvic pain, there you have the three classical symptoms, the stoppage of menstruation, irregular bleeding, gradually growing mass in pelvis and paroxysmal pain. I still felt doubt as to extra-uterine pregnancy, and two days afterward we opened the woman and found a cyst.

She had those very pains Dr. Norris spoke of running down the leg, and yet there were no adhesions. That is one instance of how we may make a mistake. I am sure, however, the President has many a time opened for tubal pregnancy and found pyosalpinx, and vice versa, has opened for pyosalpinx and found tubal pregnancy. I do not know whether he will recall a case we had at the Jefferson some years since, the woman had symptoms of pyosalpinx, we found tube on right side apparently perfect, broad ligament in good condition, the ovary had disappeared, and where the ovary had been, at the end of the tube and grasped by the fimbriated extremity of the tube was a blood-clot, nearly as big as my fist and right in the middle of it was the foetus sitting up.

Dr. L. J. HAMMOND: From the experience I have had in diagnosing extra-uterine pregnancy I would feel it unwise to elect vaginal route. Certainly in two of my cases, in the first a large part of the pelvis on the right side was filled with islands of partly detached placental tissue which were bleeding, and had I opened through the vagina I would simply have liberated the clots and added much toward profuse hemorrhage that would not have been detected until much loss of blood had taken place.

The second case was one very like it. Both of these have been reported, and illustrate clearly the importance of having plenty of room to see and deal with the condition of hemorrhage which always is to be looked for in these cases if advanced beyond the third month or earlier if rupture has taken place.

Official transactions.

FRANK W. TALLEY, *Secretary.*

Stated Meeting, June 2, 1898.

The *President*, CHARLES P. NOBLE, M.D., in the Chair.

Relation of the Great Neuroses to Pelvic Disease.

BY F. X. DERCUM, M.D.

(See page 119.)

DISCUSSION.

Dr. E. E. MONTGOMERY: I am sure we all feel well repaid for devoting the evening to the subject so ably presented to us by Dr. Dercum, and under obligation to him for the manner in which he has presented it. With the greater part of the paper I have but little to take exception. I think there are but few gynæcologists to-day who look upon the subject fairly and squarely that would consider the operative procedure necessary unless there could be discovered actual diseased conditions which were apparent, and consequently demanded operation. The existence of pain in localized areas, as described by the reader of the paper, has without question in the past been considered as a justifying resort to surgical operation, but rather with the experience of doing injury instead of improving the condition of the patient. I can remember a number of cases which have come under my observation at different times where women had been subjected to operation, and I had reason to believe from the history given that there was no special disease present in the organs removed, operation having been done for symptomatic rather than pathological condition. In such cases the results have been bad. I have seen one such patient two or three times who was continually confined to bed, constantly dwelling upon her symptoms, markedly hysterical, and no operation would be of service. It is a question whether even the neurologist would now be of any service to her. In one statement, however, it seems to me that the neurologist offends in another direction; that he looks at the shield from his side and pronounces the victim one who should be subject to his treatment and consideration alone. I have seen numbers of cases suffering from marked displacements of the uterus, extensive laceration of the cervix, complete eroded and granular appearance, enlarged ovaries, not only enlarged ovaries, but ovarian tumors, fibroid growths in the wall of the organ, and conditions of

this kind which were treated by the neurologist without any consideration of the local symptoms. It is true that many of these patients suffer from neurasthenic symptoms, but as this fatigue neuroses is the result of lowered vitality from some cause, may it not be probable that the irritation induced by the local disease is the origin of the neurasthenic state, with the continued drain of profuse leucorrhœal discharge, of irregular and profuse menstruation, of the disturbance arising as a result of continued irritation of inflammatory trouble of the uterus, of distress that must be the result of inflamed organ in the displaced position. It may be the cause of the breaking down of the nervous system, denominated as fatigue neuroses. It seems to me in such cases where it is evident that such conditions exist which must be deleterious to the health of the individual, the first consideration should be to remove the cause, if we can place our hands upon the diseased condition which is so apparent as to render it probable that it is a causative factor. I have seen numbers of cases in which the symptoms the Doctor has so ably presented regarding the neurasthenic condition are present, which have been subjected to operation and followed by generous feeding, by careful attention with prolonged rest, and the symptoms have entirely disappeared. Convalescence has possibly been a little slower than usual, but she has gotten well of nervous manifestations, has taken her place in society, and become a useful member, without being subjected to rest treatment farther than what I have suggested in the way of more nutritious diet and more careful seclusion during her convalescence. The only point in which I would feel like differing from the author of the paper would be in the value to be placed upon those symptoms in which we are able to determine active and definite causes for the disordered condition. In such cases I should say the operative treatment should be the important factor, should be considered early, and the patient would thus be saved long treatment and the expense of the rest treatment.

Dr. ANNA M. FULLERTON: Dr. Montgomery has already very fully expressed my ideas. I am sure we are all much indebted to Dr. Dercum for having so clearly presented the ideas he has concerning the relations between diseases of the pelvis and the great neuroses. Those of us who work in gynæcology have frequent occasion to observe that a nervous break-down in women is often accompanied by symptoms apparently due to pelvic disease, and, therefore, misleading. A sense of great weariness, nervousness, wakefulness, inability to walk any distance, a bearing-down feeling,

headache, napeache, backache, cold feet, irritable bladder, spinal tenderness, pain in one or both ovaries, dysmenorrhœa, low spirits, dyspepsia, bad dreams, nightmares, and night-terrors, offer a picture we all recognize.

It is easy to understand how organs, functionally as exacting as the reproductive organs are, should be profoundly impressed by the nervous and vascular disturbances which form the essence of nerve exhaustion.

The actual exclusion of a local cause for such manifestations can only be determined by a careful and intelligent examination; and this I think should be accorded the patient when marked local symptoms exist.

The absence of any gross manifestations of local trouble is not sufficient to exclude the possibility of the existence of some pelvic disorder which may serve as a source of irritation to the nervous system. Thus a peri-ovaritis, a cystic condition of the ovaries, the existence of ovarian hematoma, or even sclerotic changes in the ovary are capable of producing great pain; and pain we know is demoralizing to all the functions of the body through the effect it produces on the nervous system. Persistent pain, if it cannot be relieved by palliative or tonic measures is, to my mind, sufficient cause for active interference, even though the local lesion in the organ which is the seat of pain, may not seem an aggravated one.

Again the anemias and toxemias so often associated with, and, in reality, the direct result of pelvic disorders, are in themselves capable of producing nervous exhaustion through the perversions of nutrition they induce. Hemorrhages, constipation, pus in the pelvis, malignant degeneration, must, of necessity, affect the character of the blood, and, through it, the nervous system.

We make a mistake as gynæcologists, perhaps, in sometimes promising too much as the result of the local treatment of pelvic disease. We certainly need to give due heed to the claims of the patient's general condition, treating, not the pelvis alone, but the woman as a whole.

In summing up the results of his experience Dr. Goodell said, in one of the last articles penned by him: "From a large experience I humbly offer to the reader the following watchwords as broad helps to diagnosis. In the first place, always bear in mind what another has pithily said, that 'woman has some organs outside of the pelvis.' *Secondly.* Each neurotic case will usually have a tale of fret or grief, of cark and care, of wear and tear. *Thirdly.* Scant or delayed or sup-

pressed menstruation is far more frequently the result of nerve exhaustion than of uterine disease. *Fourthly.* Anteflexion *per se* is not a pathological condition. It is so when associated with sterility or with painful menstruation, and only then does it need treatment. *Fifthly.* An irritable bladder is more often a nerve symptom than a uterine one. *Sixthly.* In a large number of cases of supposed or of actual uterine disease which display marked gastric disturbance, if the tongue be clean, the essential disease will be found to be neurotic; and it must be treated so.

Seventhly. Almost every supposed uterine case characterized by excess of sensibility, and by scantiness of will power is essentially a neurosis. *Eighthly.* In the vast majority of cases in which the woman takes to her bed and stays there indefinitely, from some supposed uterine lesion, she is bed-ridden from her brain and not from her womb. I will go further and assert that this will be the rule, even when the womb itself is displaced or it is disordered by a disease or by a lesion that is not in itself exacting or dangerous to life. *Ninthly.* Groin aches and sore ovaries are far more commonly symptoms of nerve exhaustion than of disease of the appendages. *Finally.* Uterine symptoms are not *always* present in cases of uterine disease. Nor when present, and even urgent, do they *necessarily* come from uterine disease, for they may be merely nerve-counterfeits of uterine disease."

I think that these views express the opinions of many of us in regard to neurosial symptoms. They may or may not find their source in the pelvic condition. We must meet the demands of the nervous system by treatment directed to its restoration—and for this simply local treatment may be insufficient.

Dr. EDWARD P. DAVIS: I have listened with great pleasure to Dr. Dercum's paper, as I am sure we all have. In my own experience several forms of neuroses have seemed to have direct bearing upon pelvic diseases. There are chronic neurasthenic women who do not develop normally in the pelvic structures. Dr. Dercum may recall a case he saw with me in consultation some years ago of a young girl imperfectly developed cerebrally, who had also marked lack of development of the pelvis and whose labor was characterized by a marked surgical shock from which she recovered with considerable difficulty. She has been for some years in the insane wards of the Philadelphia Hospital where she is at present making a very gradual recovery. She was not only a neurasthenic but has a contracted, ill-developed pelvis, with ill-developed womb, and also a psychical

neuroses added to the original condition. Then we have psychic neuroses developing in pregnancy and labor, or, rather neurasthenic conditions arising in just such patients as Dr. Dercum has so well described. There is, however, in these patients, owing to the neurasthenia, a very strong psychic element, and I believe it is to the intensely depressant influence of the psychic element that we must ascribe at times some very serious conditions. One of these conditions is not only prolonged labor, but distinct surgical shock of extraordinary degree. A second condition is secondary temperature, developing from twenty-four to forty-eight hours after birth of child without known anatomical cause. This brings to my mind a case, occurring in the middle of the night in a hospital where a young, frightened, neurasthenic girl delivered thirty-six hours before, was discovered bleeding: the most active stimulation was required to check hemorrhage and bring back tone to the system. Another was a patient who died of pulmonary clot. One element in the neurasthenic condition of this patient was a profound mental psychosis. She previously visited a fortune-teller who had foretold her death. It was impossible to persuade her she would live, although she rallied from shock, subsequent heart-clot carried her to her death. Persistent nausea in women during pregnancy is held by some authorities to be a pure neurosis. This is a very remarkable condition and would come under the head of neurasthenia and hysteria as described by Dr. Dercum. In the toxemias both in the pregnant and non-pregnant woman, we have the extraordinary history of neurasthenic symptoms, usually which cannot be solved by pelvic surgery or treatment, unless toxemia is taken distinctly into account. Here the successful gynæcologist must be not only a neurologist but a medical man as well, if he is to deal with these cases. It is the entire metabolism of the body which must give solution to this problem. We have only to call attention to extraordinary headaches of some of these patients. They may have pelvic disorders as well; one can perform oophorectomies without relieving the headaches, nor can any one cure them except when he comes to the toxemia which is causing them. In some cases of eclampsia we have symptoms counterfeiting hysterical symptoms. We occasionally see in pelvic pain a purely gouty condition referred to the pelvic organs. A patient was recently sent to me by a medical man, and on examination I found the usual changes in a woman of her age, namely, atrophied uterus, a womb slightly torn in parturition, and pelvic floor somewhat torn and relaxed, but which did not require attention.

When her case was looked into it was found that a condition of gout was at the bottom of this trouble; the patient was almost sure that she had a severe pelvic disorder and her physician was unwilling to treat her until the examination was made. Patients in whom hysterical psychoses are well developed should be examined under anesthesia. I believe that none of us who see these women as patients can dispel more quickly the idea that a pelvic condition exists demanding operation than by a thorough examination under ether. I recall a woman who distinctly alleged that she had an offensive vaginal discharge and feared that it might make her domestic life a burden to her husband. In spite of testimony of trained nurses she still believed in this discharge which did not exist. She was having applications made, counter-irritation, etc.; it was not until anesthetized and assured beforehand that if anything was wrong that it would be repaired, that when she awoke from the anesthetic the belief in this discharge had passed away. This was supplemented by tonic treatment, but the effect of examination under anesthesia was very pronounced. I think the truth Dr. Dercum teaches us has been borne in upon the minds of the gynæcologists who attended the recent meeting of the American Gynæcological Association in Boston, where, in the discussion the fact was emphasized that gynæcologists must unravel the entire organism so far as he can before asserting that he has cured his patient. It was very extraordinary to hear the statement made by a number of gentlemen that they believed more cases had been cured by the necessary rest in bed and gentle purgation after the operation of ventro-suspension of the uterus for retro-displacement than were relieved by the operation itself. While we may not agree with them, the fact is this, that certainly we are coming more and more to appreciate the facts brought out by just such excellent papers as Dr. Dercum has given this evening.

Dr. GEORGE ERETY SHOEMAKER: While greatly interested in the paper by Dr. Dercum on this very important subject, I had hoped that he would devote attention chiefly to the strict relation between the conditions under discussion rather than to the neurosis proper, which are well understood. It must be admitted that there are very many pure neuroses with simulated pelvic disease. It must also be admitted that there are cases of pelvic disease which do not develop neurotic conditions; but to take the ground that when pelvic disease and a neuroses coexist in the same patient there is no relation between them is to take an extreme view. While I am heartily in accord with much that Dr. Dercum says about the mim-

icry of pelvic disease, it seems to me that his statement that there is no relation between hysteria and pelvic disease is only a partial truth. Granted, an individual with heredity which predisposes to functional nervous disorder, or a nervous system that is excessively irritable and easily thrown out of balance, and why may not the long-continued bleeding from a uterine polypus, or the persistent pain from an anal fissure lasting months or years, be a potent cause of impairment of vital forces, and secondarily of the development of hysteria? Why may we not save blood by tying hemorrhoids, before trying to make blood by rest-cure methods; of inestimable value afterward? Where both a neurosis and a gross pelvic lesion are present I usually proceed to cure the pelvic disease, and then bring to bear every other available method of treatment for the building up of the general health. There are no conditions under which one could ever say that he was operating for hysteria. He must operate for a definite lesion, and whatever improvement is obtained in the neurosis, is indirect. As to the diagnosis of the true value of excessive sensibility and tenderness in the abdomen there should be no difficulty. An anesthetic should be given in doubtful cases. The rule scarcely admits of exception that no operation or local treatment is required in nervous cases for a cause which cannot be demonstrated under ether. The criticism is sometimes made that gross pelvic disease does not accompany nervous disturbance. This is a partial truth as I have shown by reported cases of slowly forming cancer and of pelvic abscess. The course of cancer of uterus is, however, so rapid that ordinarily there is no time for the development of the remote effects of long-continued moderate pain and hemorrhage which are potent factors in undermining the nervous system. Within one or two years from the time that cancer becomes a depressing factor at all the patient is overwhelmed by gross features of the disease, or has died. It seems to me every physician should endeavor to remove persistent definite pelvic disease as he would any lesion in any other part of the body, with the hope that secondarily the general health of the patient may be built up, and the nervous symptoms may be lessened. I am opposed to pelvic treatment or operation for nervous disorders *per se*, and constantly and consistently endeavor to avoid and to prevent them.

Dr. LONGAKER: I had the great misfortune of hearing only the latter part of this paper. I would like to refer as well as I can from memory to some recent statements made by a very prominent alienist on this subject. I refer to the presidential address of Dr. Bucke,

who stands high among the American alienists. Dr. Bucke cites a large number of operations which have been done in the insane-asylums in London, Ontario, with very beneficial results. He speaks with hopefulness, indeed with enthusiasm upon this. All of us have had under our observation women who years ago have had ovaries and more or less of their entire reproductive organs removed, and we see them in a deplorable condition. I think it is rash in many of these cases to jump at the conclusion that an operation has been at fault. Only to-night a woman was in my office, who detained me, who nine years ago had her ovaries removed, and she has had a history of discomfort ever since that. She has had eighteen doctors and spent a small fortune since. It is quite to the point to remember in this case when she tells her whole history, that she has been leading an entirely abnormal life, the greater part of it being spent in a brothel. It would be strange if such a woman did not develop an incurable psychosis not due to the operation at all.

Dr. J. M. BALDY: I will say a few words on this matter with a good deal of pleasure. I do not know when I have had a subject presented more in accord with my own feelings and views unless it was in the excellent discussion given by Dr. Dercum before the College of Physicians a year ago and covering practically the same ground. In both these discussions he brings out prominently the practical application between the neurological condition and the practical gynæcological standpoint. The whole point comes down to this: there are gynæcological and neurological conditions, and that they overlap and that they exist in the same patient, and how are we going to tell which are due to neurotic and which are due to practical gynæcological causes; it takes a well-rounded out physician to make the distinction satisfactorily. The larger part of the profession do not make that distinction, as is indicated by the cases they send to us for operative interference. It is true, unquestionably, that large numbers of gynæcological patients suffer from neurological symptoms, call them hysteria or neurasthenia as you choose; we can group them all under the head of neurological. Unquestionably this class of symptoms do exist in a large number of gynæcological cases, but just as surely they exist in a larger number of cases where gynæcological lesions do not enter. I mean by that I have a patient, the wife of a prominent doctor, with a retrodisplacement of uterus, with prolapse of ovaries, which has existed for years; had twenty-five years ago a small laceration of cervix; she has never had any practical trouble

at all until the last twelve months. She is now undoubtedly suffering from neurasthenia; unquestionably she would be put down as a gynæcological patient by many simply because she has a retrodisplacement and laceration of the cervix. Investigation will, however, show that these lesions have existed for years and that she did not have nerve symptoms before. Why put her in the gynæcological group? It is perfectly clear neurasthenia has supervened in the meantime and in this case is entirely independent of the pelvic lesions. Cases of that kind are common and I could produce hundreds from my practice.

So it is in ovarian tumors and fibroid tumors, to which attention has been called. Because fibroid tumors exist it does not necessarily follow that any neurological conditions present are due to the fibroid tumors. We have well-known local clinical symptoms produced by fibroids, and neurasthenia or hysteria is not usually one of them. I see many cases of that kind; fibroid tumors may have neurasthenia accompanying them, and they may be just as surely neurasthenics and not suffer from the fibroids, in spite of the existence of the fibroid tumor. So it is with cancers. Cancers exist two years, four years, and six years; ovarian tumors exist five and twenty years; and fibroids indefinitely, without neurasthenic symptoms; and this is the rule, not the exception. It is, therefore, nonsense for us to pretend to say that these graver symptoms do not exist long enough to cause these neurasthenic symptoms. If neurasthenia was a legitimate symptom of these grave lesions we would see it more commonly. Further, the local lacerations of the perineum and cervix are not of any more consequence than laceration of the ear, which our grandmothers used to have from wearing hoop ear-rings, as far as nerve symptoms are concerned. It seems to me that such teachings should not be allowed to go undisputed from a society of this character. There is no more reason in the case of a patient suffering from a fibroid and neurasthenia, that operation is imperative on account of the neurasthenia, than that a person who has a corn should have the toe amputated because the corn is accompanied by neurasthenia. The probability in both cases is largely in the direction of the neurasthenia being independent of both fibroid and corn. I believe the plainer we talk on this subject the sooner we are going to come to a conclusion which is correct; these have been our conclusions in the past. Again, in insane cases: I do not believe there is a case in an asylum to-day which exists or originated on account of pelvic disease. I have seen cases in asylums, examined them for

pelvic lesions simply because they had profuse menstruation, because they had pelvic or abdominal pains—cases in which the friends have asked me to do so, with conviction that pelvic disease was at the bottom of the trouble—and in no case was the insanity in the slightest degree due to local pelvic condition. It is true the pelvic condition in insane patients should be treated in the same way that we would treat sane patients, but it does not follow because they have these local conditions that their insanities are due to that cause. Take the investigations of Rohè, who has operated upon a number of such cases. He reports cures in four out of some thirty operations. These four were cured in that class of insane patients who are almost certainly cured by rest: in puerperal cases.

The cases brought out in the discussion at the American Gynecological Association were mostly neurasthenics. More of these cases in which hysterorrhaphies are done are cured by rest in bed, proper feeding, proper treatment, departure from their unhygienic surroundings at home, than by the operation; three-fourths of them are neurasthenics in the beginning. If you had incised their skin and put them to bed for four weeks they would be as well as they are following the hysterorrhaphy. As a matter of fact, numbers of these uteri become retrodisplaced after operation.

Take the cases of Polk in the Bellevue Hospital, a precisely similar class of cases: displacements, hydrops folliculi, small cysts, etc. What is a hydrops folliculi? It is a perfectly normal condition. Every ovary you ever saw has one or more hydrops folliculi. That is Nature's method of getting rid of Graafian follicles. To burn them, as Pozzi does, or puncture, as Polk does, and report patients cured, is nonsense. They are neurasthenics from the beginning; if put to bed they would be cured in exactly the same ratio. Take our almshouse class of patients, our slums—underfed, beaten, overworked, abused sexually, in every possible way living unhygienically—and what will you expect? They have an operation and are put in the hospital in a clean bed; they are cured; they are sent out, and in three months or six months they are just as bad as before they went into the hospital. So it is with laceration of the cervix; it is a definite lesion; it gives definite, well-marked local symptoms, due to the lesion and easily explainable; but not reflex symptoms, such as eyeache, headache, toeache, or backache which is unexplainable, excepting by calling them reflex—reflex nonsense!

The symptoms of gynecological lesions are definite, they are easily explained where the patient has a gynecological lesion, and

if the symptoms are such that they cannot be attributed to that class of lesion, and are of a nervous character, in ninety-nine out of one hundred cases the woman is neurasthenic and had better be let alone as far as the knife is concerned.

Leucorrhœa being a serious drain to a patient's strength is one of the myths of gynæcology. I do not believe it is any more of a drain than so much drainage from buccal glands, which is swallowed. As a matter of fact I do not believe it is ever a factor in this direction, except as far as it depresses mentally by its mere presence; that is, by the annoyance of it or the acquired idea that it is a drain to the system—and even then, probably, some doctor is responsible for putting the idea in the patient's head.

Dr. G. E. SHOEMAKER: I intended to say in my previous discussion that I believe in any any case that is liable to neurotic disturbance, the removal of both ovaries is a grave feature of the life history; and when operating for ovarian disease, some ovarian tissues should, if possible, be left. Every effort should be made to study cases thoroughly before anything is done. An operation should never be undertaken for a flexion or version of the uterus unless it is demonstrated that it has some relation to the disability of that patient. This can usually be done by packing or supporting temporarily that displaced organ without the knowledge of the patient. It will frequently be found that the patient cannot tell the difference whether the retroverted uterus is replaced or not. When it is demonstrated that it does have a decided effect upon pain and distress, an operation, as conservative as possible, is advisable. I have two cured cases of well-marked neurasthenia where a badly descended uterus has been proved by late results of treatment to have been a veritable thorn in the flesh.

Dr. CHARLES P. NOBLE: It must be interesting to us to see how nearly gynæcologists and neurologists agree. In cases where overlapping occurs, when both nervous disease and diseases of sexual organs are present, just as the neurologist is inclined to try first the rest-cure, so the gynæcologist is inclined to treat first the pelvic disease. The explanation is simple. Each has most confidence in what he knows best, and is inclined to exhaust his own resources before calling in assistance.

Dr. F. X. DERCUM: I am exceedingly obliged for this full discussion. I have been very much gratified to learn of the unanimity of opinion. My object to-night was to point out two things: First, that symptomatology of neurasthenia is one thing, the sympto-

matology of pelvic disease an entirely different thing; secondly, that the symptomatology of hysteria is one thing and the symptomatology of pelvic disease another thing. A local disease of the foot and melancholia are two entirely different things, and yet may co-exist in the same case; surely because an insane man may have a fractured leg, we are not justified on attributing the insanity to the fracture. In regard to the remarks made by Dr. Montgomery, I pointed out first that an eye defect may exist for years and be unrecognized. When a man or woman becomes broken down by over-work the eye defect is discovered and an oculist is consulted and the patient is glassed. It is just as proper to remove local cause of disease anywhere else—just as proper to operate upon a neurasthenic woman under certain condition as it is to glass her. A neurasthenic woman may have a tear and not know it for many years, and it may only be when she becomes neurasthenic that the surgical condition obtrudes itself on her consciousness. Visceral sense impressions are in health all relegated to the unconscious field of the ego, and it is only when we are ill that these visceral sense impressions thrust themselves upon our consciousness and then this or that organ demands attention. But we should always remember that when we operate on a tear or some more serious trouble, we are not curing the neurasthenia, but only removing a possible cause of local irritation. I am thoroughly in accord with the remarks of Dr. Baldy, and he has stated my own position exactly.

In regard to the remarks made by Dr. Fullerton I am largely in accord, also with the remarks of Dr. Davis. The case he alluded to was distinctly a neuropathic case. In neuropathic cases we have a congenital or hereditary defect of nervous organization; in the neurasthenic cases we have an acquired disease with a well-fixed syndrome. There is no close relation between neuropathic and neurasthenic cases.

In regard to Dr. Shoemaker's statements, I dwelt especially upon the symptomatology of hysteria and neurasthenia in order to clearly present the fact that these two have a set of symptoms entirely distinct from pelvic disease.

In reference to the statement made by Dr. Longaker in regard to the insanities, I answer that insanity is a barren field for surgery. It is well known that now and then the course of a case of melancholia changes after an attempt to suicide, or after any other surgical or other trouble, sometimes for the better, sometimes for the

worse. The course of an insanity may similarly be modified by a surgical shock, but the outcome is always uncertain. More often the course is not modified at all.

Official Transactions.

FRANK W. TALLEY, *Secretary.*

TRANSACTIONS OF THE NEW YORK OBSTETRICAL SOCIETY.

Stated Meeting, held May 10, 1898.

WM. M. POLK, M.D., in the Chair.

Tubal Pregnancy.

Dr. J. LEE MORRILL: This specimen is a tubal pregnancy of about three-months' duration, the sac being still unruptured. The patient from whom it was removed was twenty-seven years of age, and had had one child and one miscarriage. On April 27th she had an attack of abdominal pain which she supposed was due to an approaching abortion. The pain was not very severe and there was no discharge. I gave her a little opium and told her to send for me if she did not feel better soon. The next morning she was well enough to resume her household duties and remained well until May 6th, when she went out and after walking a few blocks was suddenly seized with severe pain in the abdomen and had to be assisted to her home. She was then seen by a physician who ascribed the pain to impending miscarriage and gave her a hypodermic of morphin. He noticed her blanched appearance and was surprised to learn that there had been no discharge of blood. When I saw the patient several hours later she was in a state of profound collapse and pulseless. A tumor could be felt in the posterior cul-de-sac and a diagnosis of ruptured extra-uterine gestation was made. Dr. Edebohls saw the case with me as soon as possible and did a laparotomy, removing this specimen. The tissues were so exsanguinated that there was hardly blood enough in the wound to soil a sponge. The pelvis was completely filled with blood. Unfortunately, the woman did not rally after the operation. The specimen is interesting because the sac is not ruptured. I believe this is rather unusual.

Cystic Kidney removed during Pregnancy.

Dr. W. M. POLK: This cystic kidney was removed from a woman 35 years of age who was five-months' pregnant. The patient had been married fifteen years, and had had nine children, of whom seven are living. The kidney trouble began shortly before the birth of her

last child, five years ago, when she had a sudden attack of pain in the right lumbar region below the liver, accompanied by eructation of gas and general pain over the abdomen. She recovered after several days' rest in bed. The second attack occurred seven months later and was similar to the first. The onset of the third attack was gradual, and since then she has had a succession of attacks, the acute symptoms lasting about four days and the pain being relieved by catharsis. At the time she entered Bellevue Hospital she was four-and-a-half-months' pregnant, and she was operated upon at the fifth month. The operation did not present any special difficulty. On account of the large size of the tumor, an abdominal incision instead of the usual lumbar operation was employed. The sac, which was rather thin-walled, was enucleated from its peritoneal attachments and from the ascending colon. The cyst occupied the lower portion of the kidney—the pelvis of the kidney. The entire mass was about the size of the fetal head at term. After evacuation and enucleation of the cyst, the vessels were easily found and secured, the mass removed, and the pedicle dropped back. The patient made an uninterrupted recovery, and was confined at the proper time. During the remainder of the pregnancy the urine showed absolutely no change. This is explained by the fact that the right kidney had been useless for years, and the left had been doing and continued to do all the work. The cyst had been caused by an occlusion of the ureter about an inch below its point of attachment to the pelvis; in other words, it was a case of hydronephrosis.

Operation for Repair of Rupture of the Urethra following Symphysiotomy Delivery.

Dr. Polk: I recently operated upon a woman 27 years of age for the purpose of closing a rent in the urethra caused by a difficult labor after symphysiotomy had been performed. She made a good recovery from the latter operation, was out of bed at the end of eight weeks, and locomotion was normal, showing that perfect union of the bony structures had taken place. The tear of the urethra, which involved its entire upper aspect, had not healed, and the woman had complete incontinence of urine. The question of how to get at the tear to close it then arose. I soon found that I could not get at it sufficiently well from below, so I decided to do a suprapubic operation. After the incision was made the bladder was separated from the uterus, and the urethra from its attachments to the symphysis,

thus enabling me to draw down the bladder sufficiently to permit me to get at the rent which extended into the bladder. In this way I secured sufficient space and tissue to work with. An ordinary flap operation was done, and the result was good so far as closure of the rent was concerned, but in spite of this there is still some involuntary escape of urine. I explain this by the fact that the muscular attachments of the triangular ligament were destroyed and could not be restored. During the first few months following the operation the woman could hold her urine two or three hours at a time, but the incontinence returned, although she can still retain her water while she is in bed, and better while sitting than when standing. It would seem that the crowding together of the tissues in the sitting posture had something to do with this. I found the operation easy, for going down from above gave me entire command of the field, but I confess that I have been disappointed in not being able to control the escape of urine.

DISCUSSION.

Dr. G. W. JARMAN: In line with the last case mentioned by Dr. Polk is one which was recently seen by me at the Cancer Hospital. The patient, who entered the hospital for cancer of the right labium majus, was a married woman who had no vagina, and apparently no uterus, tubes, or ovaries. The breasts were well developed, and there was the usual amount of pubic hair. The urethra was so dilated that it easily admitted two Sims' virgin specula. The woman had been married for twenty-eight years, and stated that intercourse had been very painful during the first few months of her married life, but that she had not complained because she had been told that such was often the case. In spite of the fact that the urethra was so distended, the woman had perfect control over her urine.

Dr. H. N. VINEBERG: Both cases are very interesting, the first especially so because the kidney was removed through an abdominal incision. In the second case, as the sphincter is destroyed, would it not be possible to do the Czerny operation, that is to twist the urethra 180° or 360° and thus cure the incontinence?

The case referred to by Dr. Jarman reminds me of one I saw recently. The patient was a girl 22 years of age, who came to me saying that she had never menstruated. Upon examining her I passed my finger into what I supposed was the vagina, but which upon inspection proved to be the dilated urethra. She had been treated for amenorrhea at one of the city institutions and the urethra

had been mistaken for the vagina. As she suffered from very severe menstrual molimina every two or three weeks, I opened the abdomen to remove the appendages. I found two small bodies lying on either side of the pelvis, supposing them to be ovaries removed them. On close inspection I discovered that they were not the ovaries but the rudimentary horns of the uterus lying widely apart. I therefore decided that the patient had no ovaries, and was about to close the abdomen when I detected one lying near the brim of the true pelvis. After some search the second ovary was found lying high up on a line with the umbilicus. This case goes to show that one must make a very careful search in the abdominal cavity before asserting that a woman has no ovaries, for they are apt to be found high up in the neighborhood of their origin.

Dr. E. E. TULL: Some months ago I operated upon a case somewhat similar to the first reported by Dr. Polk, *i. e.*, cyst of the kidney. The condition was due to the fact that the uterine had become occluded by renal calculi. The patient had been passing about fifty ounces of urine a day, but after the cystic kidney was removed not another drop of urine was passed. Contrary to my usual custom, I used ether in this case, and I have thought that this may have had something to do with the suppression. I would like to know what anesthetic was employed in Dr. Polk's case.

Dr. POLK: Ether. What was the condition of the other kidney in your case?

Dr. TULL: I do not know, for it was impossible to obtain an autopsy.

A Method of Vaginal Ablation in Pus Cases.

By W. R. PRYOR, M.D.

(See page 132.)

DISCUSSION.

Dr. JARMAN: I have been very much interested in the reading of this very excellent paper, and can only say that where total ablation is necessary, it would be almost impossible to improve on the method as described.

Dr. VINEBERG: In some points I agree with the gentleman who has just spoken. After doing quite a little of this work I have come to the conclusion that only those very difficult cases of disease of

the adnexa with a good deal of exudate are the ones in which I would resort to vaginal hysterectomy; in other cases, the abdominal route is preferable for various reasons. We can do better work in this way, especially if the Trendelenburg posture is employed, and we are less likely to infect the peritoneal cavity. In the very desperate cases in which Dr. Pryor's operation is suitable, we have to use clamps as a matter of compulsion. These uteri will not come down and we have to do the best we can—bisection or morcellation. By eliminating all but desperate cases, the number of cases to which the operation is applicable is materially limited.

I would be in favor of using the author's clamps were it not that it seems to me that the patient will be caused a great deal of pain when the detachable handles are replaced in order to remove them. I should think, too, that they would become soiled and rusty during the two days they are in the vagina.

I do not quite understand whether the author claims priority for the method described, or whether he is merely following the work of Landau, or has devised the method independent of any one else.

Dr. LEROY BROWN: My experience in Dr. Cleveland's service at the Woman's Hospital leads me to think that hemisection is often of value, especially in pus cases. There are many of these in which there are extensive adhesions about the tubes and ovaries, and when the uterus is removed by hemisection, these can be more easily broken up because a farther reach is afforded. The operation is attended by no special danger. The uterine cavity can be closed first if it is desired to prevent the escape of any discharge. The method is used with distinct advantage at the Woman's Hospital.

As for clamps, during the past six or eight months we have been using at the hospital on Dr. Cleveland's service, Dr. Skene's electric clamp. The experience of those who employ ordinary clamps is that they cause a good deal of pain on account of their presence. By the use of these electrical clamps none of this pain is present. They were first objected to because they could not be boiled, but this defect has been remedied. The clamp is applied to the artery, the adjacent parts are protected by gauze, a current of seven amperes is then turned on for three minutes, and the clamp is removed. I have never seen secondary bleeding occur if it did not occur immediately after the removal. The procedure takes perhaps fifteen minutes extra time, three minutes for each artery, but the advantage is that you have no clamps and no ligatures to deal with afterward, and the patients are remarkably free from pain. Dr. Skene claims

that this electric clamp shuts up the lymphatics, and also that it devitalizes the ends of the nerves and does away with pain, there is also no dragging. It is ideal for carcinomatous cases for the electricity will destroy the diseased tissue. A four-cell battery is used. At first, following Dr. Skene's directions, we used to apply the current for two and a half minutes, but as slight bleeding followed removal of the clamp we increased the time to three minutes, and since then we have not had a single case in which hemorrhage has occurred.

Dr. W. M. POLK: As I understand it, Dr. Pryor's suggestion applies mainly to pus cases—cases of carcinoma being excluded. The electric clamp recommended by Dr. Broun may be very good for the latter cases. Restricting the operation to pus cases, as Dr. Pryor does, it seems to me an admirable procedure. The method of depressing the perineum and distending the vulvar orifice without cutting it is excellent. The part which appears to me most, however, is the ease with which the hemisection permits one to reach the diseased appendages. Any one who has taken out the uterus in the old way and then has had to search for the adnexa, beginning at the adherent end instead of the uterine end, can realize how difficult it is and how easy it is to injure the intestines. The uterine end is the point from which to work, for there you have a good sized mass to hold upon, and with the fingers of the other hand you can make a safe enucleation of the appendages.

Now, I have always admired the Woman's Hospital more than any other institution in this city, and my admiration increases after what we have heard to-night, *i. e.*, the courage which is shown by those working there in treating pedicles with a device like the one mentioned, ignoring ligatures and clamps. Dr. Broun and his associates are perfectly right from their point of view, but I must say that I would not care to trust to the electric clamp, although their experience unquestionably bears out their confidence in the instrument. I would not dare to be so brave, for I should not be able to sleep if I did. I confess to you that I cannot get rid of the idea that some fine day—or night—the men of the Woman's Hospital will get a hurry call, and there will be an autopsy the next day. One such performance will be enough to damn the method.

So far as the question of clamps or ligatures is concerned, I suppose like the rest of you, I will trot around in a circle, first using ligatures, then clamps, and then coming back to ligatures. Just as present I am following the plan of doing as the spirit moves me at

the moment, using the clamp or the ligature as seems to me best. I confess that I usually have a fancy for using clamps, but when they are all done up in cotton I generally want to take them off and put on ligatures. After all, the varying opinions as to the merits of the two methods go to show that neither is perfect. In some cases there is not room enough to apply ligatures as we would like to apply them, and, such being the case, we employ clamps. It seems to me that in the easy cases we apply ligatures, in others we use clamps. This is a good rule to follow. The clamps with detachable handles employed by Dr. Pryor strike me as being most excellent, but I can understand that the objection made to them by Dr. Vineberg has some ground, *i. e.*, that re-attaching the handles when they are about to be removed will cause pain. His operation appeals strongly to me and the technique is one which I would be disposed to follow. I have never tried the guide which the author recommends. I have been in the habit of introducing my finger and protecting the intestines in this way. This instrument possesses advantages, especially in cases in which we are not able to draw down the uterus.

Dr. VINEBERG; It has always struck me that simple clamping of the ovarian and uterine arteries is not always sufficient to control hemorrhage in a difficult hysterectomy, and it is here that the electric clamp would be attended with difficulties. I would feel very uncertain about trusting to it.

The limitation of vaginal work must always be borne in mind. Two weeks ago I operated upon a case of puerperal sepsis. I began from below, but found that I could not get enough purchase on the uterus. The tissues were rotten and broke down, and the woman lost more blood in this attempt than she did in the remainder of the operation which I did through the abdomen. The woman had been repeatedly curetted before I saw her, and a portion of the uterine wall had been entirely scraped away. The patient is still alive, although she developed pneumonia—probably septic—on the second day.

[Later note: The patient is now convalescing satisfactorily. The removed uterus was riddled with small abscesses varying in size from a pea to an almond.]

Dr. BROWN: One word about the electric clamp. I am not an electricity fiend. When we first began to use this clamp Dr. Cleveland and I both felt as Dr. Polk does—that we did not care to trust to it—but after we had employed it in a few cases with good results, we no longer fear it. The vaginal vault was first divided anteriorly

and posteriorly. The uterine artery of one side was then clamped for three minutes, a current of six and a half amperes being employed. In some of the cases, perhaps one out of every three, there was slight bleeding after the clamp was removed, but no trouble resulted, as the bleeding-point was caught on the spot. Later we increased the two and a half minutes to three, and no bleeding has since resulted. Of course, there is some sloughing at the point where the clamp is applied, since any devitalized tissue exposed to the air must necessarily undergo a retrograde necrosis. I speak with reference to vaginal work. In abdominal work, these same clamps are used, the abdomen closed, and no sloughing follows, the "ivory stump" of Keith being produced. If this same stump is left in the vagina it must slough.

Dr. PRYOR: The question of the respective merits of ligatures and clamps in vaginal work has been raised. I never use ligatures in pus cases because of their liability to become infected, and because it is often difficult to apply them when the bleeding vessel is high up above the brim of the pelvis. Clamps produce sloughing, because pressure causes sloughing,

In regard to infection being carried to the peritoneal cavity by the use of intra-uterine instruments, the cases are septic already, so nothing need be feared.

Now, as to freeing the adnexa after the uterus is removed, it is the facility with which this can be done which makes the operation so attractive. It is very difficult to free the adnexa before the uterus is removed.

Dr. Vineberg has raised the question of abdominal *versus* vaginal work, but this is a subject too extensive to be taken up this evening. In regard to his objection that the clamps cannot be kept clean, I have experienced no difficulty in this respect. Now, as to priority, I do not believe that anybody has the right to claim priority in any detail connected with vaginal work now that Péan is dead—he was the originator of it all. I did not take up this work until the translation of his book was published.

The technique which I employ is not similar to that of Landau, who employs preliminary hemostasis. In my method the dissection is made very carefully with the fingers in all directions. No pressure on the uterus is necessary to control hemorrhage except that exerted by a pair of bullet forceps, save in cases of fibroid or recently pregnant uteri.

In regard to the treatment of the stump, I think that in future

Keith's idea of making a clean, ivorylike stump will be the aim of us all, and this we can do through the vagina with clamps. It is true that they cause pain, but I have found that this is lessened by dilating the sphincter and muscle (thus preventing spasm), which is often injured during the operation. I do not see the advantage of ligature *en masse*.

One of the advantages of the operation I recommend is that there is no possibility of hernia into the vagina. The scar takes in the base of the broad ligaments as well as the stumps of the arteries, and healing is perfect.

Society adjourned until October 11th.

Official Transactions.

LE ROY BROWN, *Secretary.*

TRANSACTIONS OF THE WOMAN'S HOSPITAL SOCIETY.

Stated Meeting, held April 19, 1898.

J. RIDDLE GOFFE, M.D., in the Chair.

Intussusception

Dr. JOHN F. ERDMANN: I have recently seen two cases of intussusception which were of interest. The first occurred in a child under seventeen weeks of age. The child was well nourished, and the only symptom was the pink, blood-stained mucus stools. Upon opening the abdomen, after having first tried hydraulic pressure without avail, the intussusception was found at the ileo-cæcal valve. The child recovered from the operation, was discharged in three weeks, but has since died of some other causes.

The second case occurred in a badly nourished child less than five months old, who was brought to the hospital suffering from tetany. In this case also there was no other symptom than the peculiar pink mucus stools, although the child was somewhat restless. We tried the injection method without benefit, and operated early one morning. The intussusception was found in the sigmoid flexure, involved the ascending and descending colon and also about 10 inches of the ileum. The child recovered from the operation but died five weeks later of tetany. An interesting feature of the case is the fact that even when the child was under the anesthetic we were unable to detect any mass in the abdomen, and the diagnosis was based entirely upon the bloody stools.

Sudden Death from Angina Pectoris after Operation.

Dr. A. PALMER DUDLEY: Some years ago a patient came under my care for treatment for sterility. Upon examining her I found that she had a fibroid tumor of the uterus and disease of the appendages. Later she consulted Dr. Cleveland, who, I believe, found the same condition. The patient could not make up her mind to have an operation done at that time, but eventually returned to me and I consented to operate, but foolishly promised to do a conservative operation. I again examined her carefully, found her heart and

lungs in good condition, and kept her in my house under observation for a week. I then opened the abdomen and removed the fibroid by myomectomy. The appendages were also partially removed. Each tube contained about three ounces of fluid, and as they were glued to the sigmoid flexure on one side and to the cæcum on the other, an extensive stitching of the gut was necessary and this greatly prolonged the operation. The patient took the ether badly from the first, and hypodermics of whisky were given, but she was put to bed in a fairly good condition and did well until twelve o'clock that night, when she was suddenly seized with such a severe pain in her heart that she could not breathe. I could only account for this on the ground that a clot had entered her heart, or that she was suffering from angina pectoris. The pain was relieved by a hypodermic of morphia, and the next morning she was apparently all right. The temperature was normal. At noon she had another attack of pain in her heart. The temperature was then somewhat elevated and the pulse went up to 160. There was no tympanites nor tenderness of the abdomen—nothing but the intense pain in the heart. This was somewhat controlled by morphia, but in spite of the administration of cardiac stimulants and sedatives she died about midnight, thirty-six hours after the operation.

I immediately re-opened the abdomen but found nothing wrong there, no hemorrhage and no obstruction of the bowels. A post-mortem examination of the thoracic cavity could not be obtained. The case is reported to show that sometimes we meet with cases which we cannot fathom. So far as I can say death was due to some break in the coronary artery or wall of the heart, for it seems to me that if the trouble was due to a clot, it would have caused death sooner. There were absolutely no chest symptoms, with the exception of the pain in the cardiac region. There was, however, a history of occasional syncope, and for this reason she was put upon strophanthus prior to the operation.

Dr. J. RIDDLE GOFFE: The symptoms would seem to point to angina pectoris, but of course it would be impossible to determine this without autopsy, eliminating pathologic organic lesions.

Dr. JAMES N. WEST: Did the pain extend up to the shoulder and down the arm?

Dr. DUDLEY: No. The woman took the ether badly and the operation was a prolonged one—this may have had something to do with the fatal termination.

Removal of a Tumor of the Appendages through an Inguinal Incision made for the Radical Cure of Hernia.

Dr. GOFFE: I recently did an operation at the Polyclinic in a manner which marks it as a somewhat novel procedure. The patient was a woman with a left inguinal hernia, a retroverted uterus, and a tumor of the appendages upon the left side. She told me that she was a widow and was about to marry again, and said that she wanted me to make her well "without cutting her in the middle, for she knew she would not have any children if that was done." I told her I would do the best I could, so she entered the hospital and I cut down upon the hernia, separated the adhesions, replaced the gut, and removed the sac. I then went down through the inguinal incision, removed the appendages on the left side, and drew out the round ligament to the extent of about three and a half inches, and caught it with the buried sutures used to close the hernial sac, thus curing the woman of her hernia, removing the diseased appendages, and correcting the retroversion, and all through the incision necessitated by the hernia.

Two Cases of Tubal Pregnancy: Operation in the Prærupture Stage.

BY N. G. BOZEMAN, M.D.

(See page 117.)

DISCUSSION.

Dr. GOFFE: The point which the author brings forth as to the cause of the site of rupture is important and worthy of discussion. The paper also contains many other interesting points. When I left the Woman's Hospital I was constantly on the lookout for a case of tubal pregnancy, and on two or three occasions I was sure I had found one, but in each instance the case proved to be one of small ovarian cyst. I have also had a number of cases in which there were blood-clots and what appeared to be decidual tissue, but I have never cared to report these as cases of ectopic gestation because the diagnosis was not positive.

Dr. WEST: It is curious how some men meet with these cases and others do not. Personally, I have never had a case of ectopic gestation either in private or clinic practice.

Dr. DUDLEY: I do not think I can add anything to the paper.

So far as the diagnosis is concerned, one has to depend largely upon microscopical examination. I can easily account for the absence of the foetus in cases in which early rupture takes place without the occurrence of peritonæal inflammation. Within the last three months I have had four cases of ectopic gestation which were brought into the Post-Graduate Hospital from the ambulance district, and which being unassigned were turned over to me as in-door gynecologist. All were cases in which rupture had occurred, and all were operated upon at once. In two the foetus was found, while in the other two the presence of the chorionic villi made the diagnosis positive. Some years ago I had a case of ectopic gestation in which the foetus was found, after an extensive search, way up under the diaphragm, where it had probably been carried by the vermicular actions of the intestines. I believe this to be a common occurrence in cases in which rupture takes place early, and for this reason a thorough search should be made of the entire abdominal cavity. In another case of ruptured tubal pregnancy seen some years ago, the woman was so nearly dead that I did not have the courage to operate. I kept her under morphine, and with an ice-bag on the abdomen for eight days and then operated, transfusion of salt solution being employed to replace the blood which was lost on the table. A long pair of forceps was used to catch both the ovarian and uterine arteries, for I did not dare to stop long enough to ligate them. The woman recovered. Now that we are able to recognize the signs and symptoms of ectopic gestation, no other treatment than operation is justifiable, and the sooner it is done the better.

Dr. HENRY MOFFAT: My experience leads me to believe that ectopic gestation is not of infrequent occurrence. Within the last three years I have seen five (5) cases. I once saw two cases within two months. The first case was also seen by Dr. Goffe and Dr. Janvrin. The second was seen in the hospital at Yonkers. In the latter case two or three distinct hemorrhages had taken place and the patient was almost moribund. Under stimulating treatment she rallied enough to permit of operation being performed. The abdomen was found full of blood, and everything was matted together. I removed all which could be removed without endangering the surrounding viscera, and the woman made a very good recovery.

The other case was seen in private practice and showed some rather interesting features. In this patient the tubal pregnancy followed a sterility of some years, as is the general rule. This has been

the history in two of the cases which I have seen. In the case referred to there were present all the symptoms of ruptured tubal pregnancy as described in the text-books. Dr. Janvrin saw the case and concurred in the diagnosis, and set the operation for the following day. When the abdomen was opened there was the usual gush of blood. The entire broad ligament was grasped with long forceps and the distended tube and ovary removed. The patient made an uninterrupted recovery. The specimen was sent for examination to the late Dr. Heitzman, who pronounced it a tubal pregnancy of seven-weeks' standing. In my third case, the patient unfortunately died—it was a case of too much consultation. Valuable time was wasted in getting the opinion of different men, for the patient was practically moribund when she was admitted to the hospital. The fetus was still in the amniotic sac, and was the prettiest specimen of ectopic gestation I have ever seen.

In the next case I saw, the diagnosis was not made early. There was irregular pain but no flow, and it was not until the patient had had a third attack of colicky pain that the condition was suspected. This leads me to refer to a point which the author has not mentioned. I have never been able to verify the theory that rupture takes place at the site of placental attachment. I have read somewhere that hemorrhage may occur by rupture of distended vessels upon the surface of the sac before rupture of the tube takes place, and I have seen cases in which this seems to have happened. In one case the tumor gradually increased in size after it was discovered, and it occurred to me that repeated hemorrhages were taking place without distinct rupture.

In regard to the propriety of operation, I do not think that any surgeon would now disagree with the opinion that immediate operation is necessary. There is much reason for immediate operation in these cases as there is in cases of perforative appendicitis. That it is folly to let a woman go on to full term, as was formerly taught, has been borne out by statistics. I have looked up the literature to find out how many living children were born of ectopic pregnancy, and have found that there are but four or five on record, and they did not live long, only one surviving infancy.

DR. CLEMENT CLEVELAND: I have had quite a large experience with this class of cases, and I am in favor of immediate operation when the diagnosis can be distinctly made out. As the discussion has been going on I am reminded of a case which puzzled me for some time. The patient was brought to me from the West, where a

diagnosis of ectopic gestation had been made and operation advised. The family were unwilling to have it done there, so she was brought to me. She had then gone beyond four months. A large mass could be made out on the left side and a foetus was plainly felt through the thin-walled abdomen. On the right side was another large mass, which appeared to be either a fibroid or the uterus. The history pointed to ectopic gestation, but there were none of the positive signs of that condition, so I concluded to wait and watch, seeing the patient twice a day. As time went on the case appeared to be very much like a normal pregnancy and no untoward symptoms presented themselves. I examined the patient carefully from time to time, and finally came to the conclusion that I had to deal with a case of bicornuate uterus, and such it proved to be. Gradually the tumor on the right disappeared and became part of the general mass, and the woman went on to full term and gave birth to a child after a normal labor. Examination then showed very plainly the bicornuate uterus.

The question of the route to be employed when operation is determined upon is one which interests me. I employ the vaginal method whenever possible, for I never open the abdomen when I can avoid it. In the early months of ectopic gestation or in cases in which gestation has ceased, operation can generally be done *per vaginam*. After three and a half months, however, it is a hazardous procedure to open the posterior cul-de-sac and attempt to remove the mass. I have seen this tried, and such a fearful hemorrhage resulted that the patient nearly lost her life before a laparotomy could be done.

Dr. ERDMANN: I was much interested in the remarks of Dr. West, and am surprised to hear that he has not met with any of these cases. I have seen quite a number of them, although I am a general surgeon. Recently six cases have come under my observation, and I operated upon four of them. One of the cases was peculiarly interesting from the fact that fourteen months before I had removed the appendage of one side for ruptured tubal pregnancy. In another case in which a diagnosis of pyosalpinx had been made, I found a mass which extended up to the tenth costal cartilage on the left. The woman had a temperature of 101.5° F., and a pulse of 128. I opened her abdomen and found an enormous amount of blood. The foetus was nowhere to be seen, but just as I was about to close the wound it was discovered among débris and blood-clots on a towel. It was very small—only three-quarters of an inch long.

In the case in which there was tubal pregnancy of first one side

and then of the other, the foetus was found in both instances. At the time of the first operation, the patient was in collapse, and it was necessary to employ subcellular injections of salt solution, six pints being used.

I would like to ask if any of the members present have ever seen any case in which suppression of urine followed the employment of injections of large quantities of salt solution. I have met with three or four cases of gunshot wound of the intestine in which transfusion was followed by urinary suppression. I have thought that perhaps this was due to the saline injections. In each case the patient was alcoholic, and this latter fact may have had something to do with the retention.

Dr. CLEVELAND: Perhaps the retention of urine was due to the over-loading of the circulation with the salt solution.

Dr. MOFFAT: It seems to me that it is much more probable that the retention was due to shock.

Dr. DUDLEY: I would like to ask Dr. Cleveland if there was any evidence of double vagina in his case of bicornuate uterus.

Dr. CLEVELAND: No, none whatever.

Dr. DUDLEY: Two years ago I saw at the Harlem Hospital a case in which there was a bicornuate uterus, and the vagina was divided in its entire length by a thin septum, the cervix being split up to the vaginal junction.

Dr. WEST: I am somewhat surprised to hear that the operation from below is not advocated in the treatment of these cases, although I am aware that Kelly of Baltimore has reported a series of eleven cases operated upon by this method, all the patients but one recovering. He advocates this method in all cases without regard to selection, I think.

Dr. GOFFE: The question of the route of attack is an interesting one. Like Dr. Cleveland, I prefer to do the vaginal operation whenever possible. Nearly every pelvic condition can be handled in this way except a large fibroid tumor. My last vaginal operation was for the removal of a dermoid cyst as large as a football. I first evacuated the fluid, drew down the sac, ligated the pedicle, and then removed the sac. My route is through the anterior fornix. After a short transverse incision in the fornix, an incision is made nearly the entire length of the vagina. The bladder is then dissected off the uterus, and the fundus grasped and anteverted into the vagina. After this has been done, the appendages can be thoroughly inspected and the pelvic cavity carefully examined. If drainage is

required, the posterior fornix is opened and the pelvis drained in the usual way.

Dr. WEST: I would like to ask Dr. Goffe if he finds that he can remove a mass lying in the posterior cul-de-sac by operating through the anterior fornix.

Dr. GOFFE: This can be done with perfect ease. After the uterus has been anteverted into the vagina, it is astonishing how much room is afforded for exploration and manipulation in the pelvic cavity.

Dr. BOZEMAN: I have been very much interested in the discussion. The point which I especially wished to bring out is that the many cases we see in which there is an exudate or a collection of pus in the pelvis are really primarily cases of ectopic gestation in which the foetus has become absorbed at an early stage. The placenta no doubt acts as an irritant and causes rupture. In many cases a positive diagnosis can be made even although the foetus is not found. I think Dr. Erdmann is right in saying that many of these cases are met with in the dispensaries of the lower part of the city. This may be attributed to the hard work which these poor women do. Hard labor is one of the predisposing causes of ectopic gestation. I have heard that during the days of slavery it was very common among the negro women of the South.

Dr. ERDMANN: I have always considered that the common occurrence of ectopic pregnancy among women of the lower classes was due to their malnutrition.

Dr. BOZEMAN: I think it more apt to be due to the hard straining and heavy lifting which they do and which arrests the ovum in the Fallopian tube, where it develops.

Official Transactions.

J. N. WEST, *Secretary.*

TRANSACTIONS OF THE ST. LOUIS OBSTETRICAL AND
GYNÆCOLOGICAL SOCIETY.

Stated Meeting, March 17, 1898.

Carcinoma of the Ovary in a Hermaphrodite.

DR. WILLIS HALL: This specimen is from a patient whose history I will read: The patient was 17 years old and pretty well developed physically; she had good muscles and had always enjoyed good health up to eighteen months ago. She had what was thought to be malarial fever in the fall of 1897, suffering almost constantly with abdominal pains radiating from the right side of the pelvis, but extending up to the margin of the ribs; in fact, she complained of most of the pain in the region of the liver. She was treated for disease of the liver by several physicians. This patient had some peculiarities that the doctor who referred her to me could not account for. She had considerable beard: there was a considerable growth of hair upon the extremities; the voice had changed at about the age of fourteen or fifteen years and became quite coarse, like a boy's voice, and she had excluded herself altogether from society and had refused to associate with her former playmates along about that time. This was entirely unaccounted for. The doctor had tried to make an examination, and he found what he supposed was an atresia of the vagina, but it was really due to the timidity of the patient and to resistance on her part. I made the first examination without a great deal of difficulty because she had then been examined once before. But on digital examination I found the uterus very small, infantile, in fact, retroverted, and I could distinguish it as being entirely separate from the growth which existed, a solid tumor which existed on the right side, presumably of the right ovary. I found also, on this examination, that the uterus was very firmly fixed—it was immovable; I found, also, the pelvis very narrow, with more the contour of the male pelvis. The anterior superior spine was perhaps an inch and a half narrower than the average female pelvis. Her mother gave me a history of one menstrual period at about the age of fourteen, before these symptoms that I have already described to you developed, but it was very unsatisfactory and of very short duration, only lasting a few hours, but it was a slight menstrual period. Her health began

to fail about eighteen months ago, when these pains on the right side began. On examining further I found a tumor about four and a half inches in diameter, and it seemed to be solid; it was of the consistency of a fibroid tumor. But there were no symptoms pointing to a fibroid; there had been no excessive hemorrhage; in fact, she never had any except this one little attempt at menstruation. The uterus was absolutely fixed by the tumor; it moved with the tumor. You could outline it because it was retroverted. The uterus was practically in the cul-de-sac so I could outline it from the tumor. I found that the case was not one that was amenable to the ordinary gynecological procedures or treatment, so I had Dr. Mudd examine her with me the next day under chloroform, and he substantiated the tumor condition, but we found another condition that would account for the growth of hair, change of voice, etc. We found a very much elongated clitoris, with a rudimentary glans and a slit in the glans where the urethra should have been, with a well-pronounced prepuce, and under this prepuce was unmistakable smegma. We found under chloroform, also, the depth of the uterus to be small.

DISCUSSION.

Dr. MCPHEETERS: What was the size of the clitoris?

Dr. HALL: About an inch and a half in length.

Dr. MCPHEETERS: About the size of a lead-pencil?

Dr. HALL: A little larger than a lead-pencil—about as large as my little finger at the tip end.

Dr. GEHRUNG: Were the prepuce and clitoris together?

Dr. HALL: Yes, they were where the clitoris should have been. We found the tumor to be a little to the right of the uterus; it was non-elastic but closely related to the uterus. The patient has a very well developed growth of hair on the limbs and face; the hair is strong and resembles the beard.

Here is a report of the microscopical examination of the tumor: The tumor consists of several yellowish-white, irregular nodes of grayish opaque spots and dark red bloody places. There are strips of connective tissue; the tumor is covered by a fibrous membrane, and on one side of the tumor are several small cysts with mucous and gelatinous fluid. A microscopical examination shows that the whitish nodes consist of alveoli of epithelial cells and a small quantity of connective tissue, which is composed of a few fibers, of a few cells and large spaces between the fibers. The alveoli are small. Some

of them contain lumen, the others are solid. The epithelial cells are cylindrical with large nuclei; the yellowish, opaque spaces are composed of necrotic tissue of the same character as the described tissue. The necrosis is due to a destruction and closing of the nutritive arteries. The hemorrhagic places are a result of destruction of the artery by the tumor. The tumor is a medullary carcinoma of the ovary. I should have stated that this condition of hermaphroditism was not known to the patient or to the parents.

Dr. MCPHEETERS: Did you remove the clitoris?

Dr. HALL: No sir.

Dr. MOORE: In what station in life is the patient?

Dr. HALL: She is a farmer's daughter.

Dr. MCPHEETERS: What has been the result of the operation?

Dr. HALL: She is doing nicely so far; the operation was done only eleven days ago. I should like to hear from Dr. Mudd.

Dr. MUDD: The tumor was of varying consistency; there were some soft spots, others harder; some dark red, owing to the vascularity. The general outline was not very unsymmetrical. It was wedged in the pelvis so that, although the adhesions were not firm, it was a difficult matter to get into the pelvis and lift it out. It was some little time before it could be elevated. The pedicle was broad and rather thick; the adhesions were recent—none of them were very firm; they were vascular. The mass was adherent to the posterior surface of the uterus and the broad ligament and right side of the pelvis; the appendix was adherent to the tumor; the appendix was thickened and inflamed and it was removed.

Dr. DORSETT: Did that produce the bowel trouble?

Dr. MUDD: I think the disturbance in the bowel came from the pressure of the tumor.

Dr. MOORE: Was there bowel trouble?

Dr. MUDD: There had been fever; it was thought to be malarial fever; she had been confined to her bed three or four weeks with it and had made a slow recovery. The doctor who treated her for the fever had no definite knowledge of the presence of a tumor, though he knew there was something wrong in the pelvis; he knew there was an inflammation and thought possibly it might have started from the appendix or from about the ovaries, but the question of the inflammation impressed itself upon him and he brought her to the city thinking it was a surgical case, not knowing distinctly what was the character of the case. She had been practically disabled for four months.

Dr. MOORE: I would like to ask what called attention to the surgical nature of the case?

Dr. MUDD: The continuous pain in the pelvis; during and after the attack of fever there was a very marked tenderness.

Dr. HALL: There was a total absence of menstruation, and this also caused his suspicion that there was something wrong with the uterus.

Dr. DORSETT: Was the opposite ovary all right?

Dr. HALL: It was small. The mammary glands were not developed at all; the whole contour was that of a boy rather than a girl; the pelvis was narrow. There was no disease of the bowels; the constipation she had was due to the obstruction and inflammation.

Dr. DERIVAUX: Had the growth seemed to undermine her constitution at all?

Dr. HALL: Yes, she has lost weight and strength constantly, in the last four or five months particularly. There was no enlarged glands at all.

Dr. MCPHEETERS: Was there any cause for the tumor?

Dr. HALL: None that we could ascertain; it is rather a unique case from the sexual irregularity.

Dr. DERIVAUX: How long has the specimen been in the preparation?

Dr. HALL: To-day is the eleventh day. I should have stated that we could find no testicles, rudimentary or otherwise, in fact, the female organs predominated; the vagina was most perfect in its contour; it was small, but there was no atresia.

Dr. MCPHEETERS: Did the enlarged clitoris hang down into the vagina?

Dr. HALL: No; it hung between the labia but not into the vagina.

Dr. MCPHEETERS: Was it subject to erections?

Dr. MUDD: Oh, yes; it was very distinct.

Dr. FORD: It happens that I am just now engaged in a case which is giving me some anxiety from pains over the lower part of the abdomen, and when I first saw the case, examining by the vagina, I found a little nodule in the left lateral fornix, which I excised and submitted to a microscopist. There had been pain about the region of the external extremity of the Fallopian tube, pretty far out on the left side and a little below the anterior superior spinous process of the ilium. But no pain on the left side near the uterus and no enlargement or tumor could be felt by vaginal touch; but

the pains coursed in the lower portion of the abdomen and were especially manifested in the evening—afternoons and after she had been standing for a considerable length of time during the day. This patient is a woman who did her own work; she conceived the idea that she would do so last summer for her own satisfaction and she has been doing perhaps more than she ought to have done, and she noticed that the pain occurred on the left side, especially toward evening and after dark, becoming more and more intense, so that when she retired for the night the pains were at their worst, but they declined and diminished as night went on, and toward morning disappeared. Under this point of view it would seem that the trouble was probably a varicocele of the left broad ligament and that pressure upon the ovary probably gave rise to some ovarian disturbance, and that might possibly be an explanation of the matter. But from the fact that there was tenderness on pressure at this point, it would seem that the trouble might have been from the long-continued effects of pressure; but at the same time, during treatment for that condition, which consisted mostly of mild laxatives, rest, and recumbency, she began to develop pain in the right side of the abdomen, passing entirely across, and these pains increased and became more severe, and at night were particularly severe—if I could believe her, they were exceedingly severe—and I began to think that there might be some nervous element in the matter which perhaps exaggerated it. She had pain at McBurney's point precisely—an inch below or an inch above—without a shadow of doubt it was about McBurney's point, and that became worse and worse as the time for her period came on, and by strict recumbency in bed these pains have slightly decreased under the influence of anodynes and warm applications. But I have been inclined, in view of the pains in the right side at McBurney's point and the very marked and distinct tenderness, the marked pain on pressure, to think there is a condition, perhaps, of catarrhal appendicitis, and it is being treated for that by a mild laxative. Cases of this kind, presenting such a group of symptoms, are very puzzling; you do not know where the beginning is or the end will be. The specimen which I took from the vagina was submitted to a microscopist and he said it contained some material which pointed toward sarcoma; he did not know exactly what it was, but said it would bear watching. It might be of papillomatous origin. It may be in some of these cases that we have the early symptoms of the development of carcinoma or sarcoma of the ovary. But at the same time there is here an in-

stance of trouble of the appendix, as well as the other trouble, and the appendical trouble seems to have distributed itself over the entire lower part of the abdomen. The pains may be very vague at first in trouble of the appendix, and it may be some time before the difficulty is localized. But as the diagnosis is always vague at first it is very important for us to be on the lookout for appendicital troubles independent of diseases of the ovary.

I was struck with the condition of the clitoris as recounted by Dr. Hall. We have there a case where the clitoris is much larger than usual and distinctly cleft; that is, with the sign of a furrow underneath, elongated, with the trace of a urethra. I have seen two or three such cases, but only in cases where there was a marked tendency to hermaphroditism. In this case there was no indication of a testicle either in the labia or elsewhere; there is an imperfect development of the true female organs. But I know in such instances the furrow underneath the elongated clitoris and the depression would become the urethra of the organ if it had been properly developed, and this points to a condition which is a little interesting. In a case of that sort, at least, the female genital organs must be regarded—at least the external female genital organs must be regarded—as inadequately developed male genital organs; that of the female exists naturally in a condition of hyperplasia of the vestibule and is really the posterior or superior wall of the urethra and that the labia minora is the corpus spongiosum; the two sides—the corpus spongiosum, if separated, would make the labia minora; in other words, the labia minora, if united, would make the corpus spongiosum, and this forms the urethra, extending from the real orifice of the female urethra to the extremity of the clitoris. That points, then, to the fact that the female is an inferior development, in a sexual point of view, to the male; that she is an incompletely developed male, and we may carry that analogy still further throughout her economy—that she is physically less completely developed, there is no doubt; that she is mentally less developed, many claim; and that in a sexual point of view she is undeveloped—that is, that she is an undeveloped male—seems to be true.

Dr. MOORE: Apropos to this subject I want to illustrate the difficulty in diagnosing certain cases of appendicitis. The case to which I wish to refer is that of a woman who had borne a child fifteen years before and had not been pregnant since; she had been in the most perfect health; she had a fleshy abdomen. She had claimed for a number of years that she had a tumor low down in her right side,

but she would not submit to an examination as it never gave her any special trouble except occasionally at the menstrual periods. I was sent for to see her one morning and found that the pain had increased above the ordinary, when she had vomited several times during the night after a very hearty supper. On the evening before her husband, who was one of the meddling kind, gave her some mixture for diarrhea, she having had two or three passages. This medicine was a cholera mixture and like all of its kind had for its basis opium, and it alleviated the pain to a certain extent. Her menstrual period had come on two days before. She said to me when I entered the room: "Doctor, this tumor in my side which I have told you about so much is hurting me more than usual at this menstrual epoch and I have been vomiting in consequence of indigestion on account of my supper last night; I have taken this medicine against my will at my husband's solicitation." There you are. It could feel nothing through the fleshy abdomen; nothing whatever. I took her temperature and found it was $100\frac{1}{2}^{\circ}$ F., if I remember aright—not more than that. I suggested the possibility of appendicitis on the first day and an examination was refused.

The symptoms went on with a varying temperature of $101\frac{1}{2}^{\circ}$ F., with no further vomiting; there was a slight suggestion of nausea. I did not know what it was, but thought it might be an inflamed cyst or some inflammation about a cyst. Finally an examination was permitted per vaginam, and I could feel nothing whatever; over that site nothing could be felt. I still thought that possibly appendicitis was present and called in a surgical friend, but he could feel nothing to indicate this condition; nothing whatever could be determined through the abdomen. The bowels were open, the vomiting had ceased, the temperature had not increased and sometimes approached the normal, but the pain was still present. Finally the continuation of these symptoms led us to believe that there was suppuration present and an operation was determined upon. A very long incision was made through the abdominal wall and quite a quantity of pus came away. The patient and her husband were both assured by the surgeon that the outcome was altogether favorable. Two days after the woman did not look to suit my surgical consultant and he concluded to reopen the wound, with the result that there was a great deal of shock, no pus was obtained, but the death of the patient followed, and all because of my inability to recognize appendicitis immediately; another death has been added to my list and I think largely because of the meddling of this woman's

husband. It was one of the most confusing cases that I have ever seen.

Dr. GÆHRUNG: Was there any appendicitis found?

Dr. MOORE: In this case, as in many others, the surgeon informed me that the suppuration had destroyed the appendix, so that, of course, they could not find the evidence in the appendix.

Dr. DORSETT: Did the husband object to an examination of the woman?

Dr. MOORE: She objected herself; she knew she had this tumor all the time, and for a long time, but she would not permit an examination.

Dr. MUDD: I should like to say a word or two. This case is interesting from several points of view. I mean Dr. Hall's case. It was a medullary carcinoma in a girl 17 years old. The peculiarities in the development of the woman were interesting. She had on her face a number of well developed hairs, such a beard as we might expect in a boy 17 years old; they were scattering, but quite heavy hairs, and the whole conformation of the woman in her development was that of a boy 16 or 17 years old. She had a well developed clitoris at least three inches long when erect. Erection was at times quite marked. There was a vertical slit at the glans which terminated in a smooth mucous surface slightly grooved that extended back to the urethra. The urethra itself, however, was perfect, and the orifice was about its normal position. The vagina was normal. The os uteri small but firm. The depth of the uterus $1\frac{1}{2}$ inches, body small. The pelvis appeared narrow, no measurements were taken. No sign of testes could be found in labia, abdominal wall or in its cavity. The ovary on the left side was small, hard, atrophic or undeveloped. She had never menstruated, a slight show some years ago being the only evidence of menstrual effort.

In this case the appendix was adherent to the tumor. No appendicitis had been diagnosticated and did not produce serious trouble. I will say that this week I had a patient brought to me from the country with a history of appendicitis, and the diagnosis of appendicitis had been made by the two very intelligent physicians who attended her; she had had two attacks, one on February 2nd, and one on February 22nd; she was in bed during the first attack for four days and in the second attack two weeks. On examination of the case I found a well defined cyst, although this cyst had given no palpable evidence of its presence until the acute inflammation developed, and was not known to exist up to the time that she came

here. It developed that the acute inflammation was the result of a twist in the pedicle.

Appendicitis is, as has been said, sometimes very difficult to diagnose. I remember very well a patient who came to me two years ago with an appendix four inches long, and this appendix involved in a very serious inflammation, although it had not ruptured, she had been bed-ridden for two years, but the condition had not been recognized. When the patient came under my observation I could outline, with ease, the appendix lying on the brim of the true pelvis, and upon its removal the patient got well. I recollect a case of appendicitis which had its origin thirteen years before operation, in a spell of fever that lasted six weeks, and which was treated as a case of malarial fever. The history of the case was, however, so clear that it was evidently a case of appendicitis which started at that time. The patient had had subsequent occasional attacks of colic, would stay at home a few hours or a day or so and be out again. In that appendix was found a calcareous mass, and it finally ulcerated through and produced suppuration and diffuse peritonitis. I was called to see the patient and on the second day after rupture operated and the patient recovered. The mass of calcareous concretions was as large as the end of my thumb. Thick purulent fluid was found in pelvic cavity and about appendix. In speaking of appendicitis and considering its character, we ought to consider the anatomical peculiarities we meet. I have seen the appendix as big as my thumb and not more than an inch long. I have found it adherent to the liver, or found it adherent to the intestine on the left side. I have found it under the umbilicus and low in the pelvis. It varies in length from eleven inches to three-quarters of an inch. The varieties of trouble that may come from the appendix depends upon the nature of the part, the circulation, and upon the relations of the adhesions; upon the character of the irritation, whether it is obstructive, or such inflammation as is started occasionally by rousing the activity of the bacilli coli communis.

Dr. GEHRUNG: Was there any connection between the muscular development of the patient of Dr. Hall and the tumor?

Dr. MUDD: We assume to trace a good many tumors to embryological errors. This patient was imperfectly developed, the ovaries were not developed; the uterus was undeveloped and this carcinoma might have started from some such cause. An interesting point in connection with tumor of the ovaries is that at the beginning of cystic degeneration we may have much pain even as

we may in sarcomatous or carcinomatous conditions; the patient not unfrequently suffers pain and may have fever accompanying neoplastic growth. I have seen cases where it was impossible to trace the origin of the trouble and found that when the cyst began to develop, the ovaries became inflamed, local peritonitis existed. Pain accompanies the development of even a simple tumor. It is true you are more likely to have these inflammatory conditions developed with dermoids and carcinomas than with simple cysts. But they do occur in simple cysts.

A patient just left the hospital day before yesterday who came from Kansas City a month ago with a diagnosis of fibroids of the uterus. She was 43 years old; an old maid, perfectly well until within about a year. Her menstruation had been a little more frequent and profuse than usual and she developed very rapidly a large tumor, which presented in the abdominal wall; it could be felt as a hard tumor; but upon deep pressure you could feel fluctuation. I found upon examining her that she had nodules in the uterus and a cystic tumor also, and my diagnosis was that of cystic tumor of the ovary with fibroids of the uterus, and upon operation I found a cystic sarcoma of the ovary.

Dr. DORSETT: Was there nothing in the uterus at all?

Dr. MUDD: Yes, I found a number of tumors and enucleated some of them, and closed the openings thus made in uterine tissue with ligatures.

In many cases where you have a malignant tumor of one ovary, you have a malignant tumor of the other ovary. In this case it did not exist. I have operated within the past three years in at least four cases in which I had a double cystic epitheliomatous development of the ovary, that is, of both ovaries—both of them were involved in the epitheliomatous process.

Sarcomas are apt to involve both, and often become disseminated in the abdominal cavities, this I have observed several times, notably in a case that came under my observation last fall from Colorado, in a young woman 30 years of age, who consulted a very able physician in Denver, and he recognized a tumor which he thought was connected with the liver, or perhaps with the stomach; it was in the epigastric region. This thing that he recognized had begun to develop and the woman became rapidly emaciated, and with the emaciation came an increase in size and a development of dropsy, as he supposed, and he tapped her; but it was a dry tapping—he did not get anything, and the patient drifted from bad to worse, and he

brought her to this city as an invalid. She was extremely emaciated, and the tumor was very large, and it was a question about the character of the tumor. We were inclined to think it was some sort of malignant tumor and the patient wanted an operation. We opened up the belly, and found a very large cyst of the right ovary, and it was not filled with fluid contents, but with a semigelatinous, semiliquid material; the cyst wall was so degenerated that in running the hand along to break up the adhesions, the parts of the tumor would break off—it would break down into the substance of the tumor; the operation was pretty rapidly made, the whole thing swept out and the pedicle ligated, and then I devoted myself to clearing the abdominal wall of any masses which were still left; I cleared them away, using a sharp curette. I found after I got them cleared away that there were two other tumors still present, one on the mesentery, quite a hard, large whitish looking mass: it looked like white grapes, small, firm and hard; and there was another one of the same kind on the ilium near the junction with the colon. These were so firm that the sharp curette would not touch them; they did not break down these little cysts and concluded I had better let them alone, and the doctor who was standing alongside said "close her up quick." She did look pretty badly. I said to him she will be all right; she will get over the operation. But I was so concerned about the patient that I said to him, I think as soon as this patient gets able to move at all you had better take her home; they would rather have her at home to die and I do not think she can live very long. The patient went on without an untoward symptom, the parts healed up, and after ten or twelve days she started for Denver; and I had recently a letter from her saying that she had gained 35 pounds and was well; was able to go to parties and was dancing. The examination of the specimen showed, according to the report of the pathologist, that it was a cystic tumor of the ovary with sarcomatous degeneration of the wall of the cyst. Now this fact of the tumor spreading so rapidly over the abdomen and involving so much of the intestine is interesting, and this is not an isolated case. I have seen a number of them; cases which looked like they would die, and yet they get well after the removal of the tumor and go along for six months or several years and later succumb. This patient will certainly die of that trouble, but for the present she is relieved. These cases usually have more pain than the simple tumor; the growth is more rapid; you have some irregularities; you have a mass which grows rapidly and

the diagnosis becomes increasingly difficult with the growth of the tumor.

Dr. MCPHEETERS: Will the involvement of the one ovary account for the entire absence of the menses?

Dr. MUDD: No; I think this was due to the imperfect development of the uterus itself. The left ovary was not larger than a good-sized bean; it was very hard and firm and did not show macroscopically any ovarian structure. I suppose this was true also of the other ovary until it took on this carcinomatous degeneration.

Dr. HYPES: I would like to ask if I understood you to say that where one ovary is affected with a malignant tumor the other is also usually involved?

Dr. MUDD: Yes, sir.

Dr. HYPES: That is not generally the case in other parts of the body is it?

Dr. MUDD: We have malignant tumors extending in three different ways. That is when a part becomes involved in a malignant growth we are apt to have it extended in one of three ways. We may have it multiplying in symmetrical organs; if you have one kidney involved in a cancerous growth, you are apt to have the other involved. Then, aside from symmetrical organs you may have it disseminated by means of the same kind of tissue; you may have it starting from the skin and extending in it until many foci are thus developed or disseminated; if it is in the peritoneum it may develop a number of places in the peritoneum; if in some other tissue it may spread into that sort of tissue. The most frequent extension is through the lymphatics into contiguous glands by means of the same sort of tissue, that is, skin, muscles, nerves, peritoneum, or bone, and then you may have the other development in symmetrical organs. These are the three principal ways; then you may have it disseminated through the blood—in sarcoma we are apt to have it disseminated through the blood. Of course, there are exceptions to all rules. I have just now a very interesting case under observation in a man aged forty-three or forty-four years who had syphilis and as far as we know made a perfect recovery; a tumor developed a year and a half ago—a tumor of the right testicle; it was quite large and I removed it and had it examined, and it was reported that it was a tubercular tumor of the testicle. It did not look to me like a tubercular tumor, and I told the gentleman who saw the case with me, a very intelligent physician, that I did not believe it was a tubercular tumor, that it looked like a sarcoma. This man recovered from the

operation and went about his work until about last December, and at that time he developed a shortness of breath and difficult breathing; he was disabled and went home. Pretty soon he noticed that the big toe of the left foot—it was the right testicle that was removed—he noticed that this big toe on the left foot was involved in some trouble; then there developed a tumor of the groin, not in the lymphatics but in the muscles; then there developed another tumor in the muscles above the knee; then one developed in the little toe and the fourth toe. The tumor in the big toe grew very rapidly and produced a mass twice the size of the toe; it sprang from the territory of the nail, it started around the nail and then extended to the surrounding structures. This tumor was removed and examined and it was reported that undoubtedly it was a carcinoma.

Dr. DORSETT: I thought you said the testicle was tuberculous?

Dr. MUDD: That was the report of the microscopist; I did not think it was.

WILLIS HALL, M.D., *Secretary.*

ABSTRACTS.*

This Department is in Charge of the Following Staff of Sub-Editors:

DR. T. W. CLEAVELAND, DR. G. H. MALLET, DR. A. D. CHAFFEE,
AND DR. W. T. KLEIN.

GYNECOLOGY.

UNITED STATES.

Some Remarks on the Surgical Treatment of Acute Infections of the Uterus.

DR. E. C. DUDLEY (*Clinical Review*, April, 1898) states that when the systemic condition is grave and the nervous system shows profound ptomain poisoning, a large proportion of cases under any treatment will terminate fatally. The following important questions arise:

1. Is there simple absorption into the circulation from some focus of decomposition in the uterus? Is the toxemia due to the products of a decomposing foreign body, such as a clot of blood, a fragment of placenta, etc.? If this is the case the indication is clear and imperative to remove the putrefying mass, wash out the endometrium, and establish drainage.

2. Is the uterine mucosa the seat of an infection and is it the distributing point of bacteria to the appendages and peritoneum?

3. Have pus emboli been carried through the circulation from one focus of suppuration to set up other foci in different parts of the body and thereby produce metastases above?

If the second and third questions be answered in the affirmative it is then necessary to decide whether the infection has extended beyond the uterus, for if it has extended to the other pelvic organs surgical treatment of the intra-uterine infection alone would be useless.

Milder cases may be left to palliative and expectant treatment. The graver cases have, in most instances, passed beyond the range of intra-uterine treatment before the question of operative interference is forced upon the surgeon.

What surgical measures, if any, should be used to prevent the spread of dangerous acute uterine infection which is still nearly or quite confined to the uterus?

A thorough curettage with a sharp curette is recommended. This measure, however, should be limited in its application. The only cases in which it should be performed are those which will otherwise result in dangerous spreading of the infection.

All admit the practical difficulty, not to say impossibility of selection so as

* All Abstracts are made *directly* from original articles in the language in which they were first published.—EDITOR.

to limit the operation to those infections which are really dangerous and still confined to the uterus. It is questionable whether the cause of grave puerperal, gonorrhœal, or traumatic infection is often arrested by the procedure, and yet the operation has repeatedly given rise to fatal results. On the other hand, expectancy and palliation will often be rewarded by the subsidence of grave symptoms and final recovery. There can be for a surgeon no greater cause of regret than the fact that he has exhausted the resisting forces of his patient by a dangerous and questionable measure, which in itself may have contributed to the necessity of a more radical operation, and that while by an inefficient operation he has been lulling himself into a sense of false security, the infection has been gaining irresistible force. If urgent indications arise the only hope of recovery may be in abdominal or vaginal section and drainage, or the removal of the infected uterus, together with its appendages.

Two Cases of Oöphorectomy for Inoperable Breast Cancer.

W. WATSON CHEYNE (*British Medical Journal*, May 7, 1898) reports the two following cases:

Case I.—Mrs. S., aged 34. Three years previous to operation she noticed a swelling in her right breast which rapidly increased in size. The breast was removed. One year later she had some enlarged glands removed from the axilla. Three weeks ago she felt pain along the old scar, noticed some discharge, and found that there was an ulcer in the mid-axillary line. On examination a scar was seen running toward the base of the axilla and in the space between the fifth and sixth ribs. In the scar there were two small nodules and an ulcer about the size of a shilling with considerable induration and redness of the skin around. In the axilla is a hard and tender mass, occupying the greater part of the space and firmly adherent. There are numerous large glands in the posterior triangle of the neck. The case was clearly one where no good could result from attempting to remove the disease. Led by the remarkable success which attended Dr. Beatson's case of oöphorectomy for inoperable cancer of the breast the author decided to perform a similar operation in this case, and accordingly removed the ovaries and tubes. The patient recovered from the oöphorectomy very promptly and was discharged from the hospital in less than a month after the operation. At this time the cancerous growths seemed distinctly better—the ulcer had cicatrized to a considerable extent, the mass in the axilla felt softer and less adherent, the glands in the neck were distinctly smaller, and the patient seemed much improved.

Four months and a half after the operation she again presented herself and her condition was markedly improved, the spot of ulceration had almost entirely disappeared, and the glands of the neck were reduced to the size of split peas. She continued to improve for two months more, or six months after the operation, then she began to grow worse, all of the symptoms became aggravated, and she suffered much from pain and weakness. At the last account she was suffering great pain and taking frequent doses of morphin.

Case II.—Mrs. F., aged 33. Symptoms of cancer of breast began nine months before admission to hospital. On examination a large nodular tumor was found in left breast. Skin was adherent and ready to break down; the axilla was full of glands matted together; there was also a mass of glands above the clavicle;

small, hard glands could also be felt in the right axilla. Patient was extremely weak. She had never been operated upon. No radical operation could be performed upon the diseased tissues, so it was decided to perform oöphrectomy. This was accordingly done. The wound healed well and the patient was discharged soon after. At that time it was thought that there was some slight improvement, but a few months later she began to get wore and died some months thereafter.

The results of these two cases, which were typical ones, in young women, where the ovaries were still active and where their removal, if of advantage, should have produced the most marked results, is extremely discouraging to the author. He suggests that if the operation be performed again that it would be wise to remove as much of the diseased tissue as possible, as well as the ovaries.

OBSTETRICS.

UNITED STATES.

Pregnancy and Tuberculosis.

C. E. PADDOCK (*Medicine*, May, 1898) questions the popular opinion that pregnancy has a beneficial effect upon tubercular patients. The basis for this belief is found in numerous cases within the experience of all practitioners. Although pregnancy may be considered a physiologic state, it borders closely upon the pathologic. Nausea, for example, is so common as to be considered almost diagnostic, and in the tubercular patient it is usually more persistent, lowering the patient's power of resistance to the ravages of tuberculosis. The history of these cases is usually either of abortion, or of the death of the mother before the child is viable, or soon after its birth at term, or of a subsequent pregnancy followed by death from tuberculosis. Much, however, depends on that unknown quantity, the vitality of the patient.

The multiple and frequent pregnancies occurring among those suffering from tuberculosis are an indication of degeneration rather than of the beneficial effects of pregnancy. The tendency to fewer and better offspring marks the advance of vitality. A case is sighted by Deeeves seven decades ago of a tuberculous woman who gave birth to twenty-three children, only one of whom lived to be more than thirty; the mother died at the age of forty-three.

Another vital question arises: Having a case in which tuberculosis is complicating pregnancy, shall the case be left to Nature, or the pregnancy be interrupted? This question was discussed before the Paris Academy of Medicine more than fifty years ago. In 1890 the subject of interference in such cases was warmly discussed, especially in England, Dr. Playfair giving it as his opinion "that in the greater number of cases the mother is doomed, and everything should be done in the interest of the child."

Dr. Priestley laid it down as a rule "that abortion was only a legitimate operation when the life of the mother was imperiled by the continuance of pregnancy," implying the uterus presenting itself as the only alternative to save the patient.

But as it is by no means certain that abortion will save the mother's life, or

that a feeble child would be born, this treatment can be justified only when in advanced tuberculosis the child is viable and the mother moribund. The opinion of the writer may be briefly stated thus: Pregnancy does exert an unfavorable influence upon tuberculosis in the majority of cases, the disorder progressing, as a rule, with more rapidity than in non-pregnant women.

Malpresentation with an Unusual Termination.

L. M. PROVOSTY (*New Orleans Med. & Surg. Jour.*, May, 1898) was called to attend a stout multipara, who had been in labor twelve hours. The membranes had ruptured and the os was widely dilated, but the pains had stopped. The breech was presenting in the right sacro-posterior position, and was not engaged. Twelve grains of quinine were administered but as no pains were present after an hour of waiting, chloroform was given and an attempt made to convert it into a foot presentation. During the manipulations the breech slipped up, and through the abdomen the descent of the head could be felt. Acting on this idea the breech was pushed up by the right hand in the womb, and the descent of the head assisted by external pressure. In twenty minutes the breech presentation had been converted into a vertex, first position. Chloroform was stopped, but resumed again, as no pains came, and with forceps the head was brought to the perineum. Labor pains then set in and the child was safely and naturally delivered. The author states that a friend to whom he related the case suggested that he did not know what he was talking about, but in spite of this discouraging comment he is very positive as to the accuracy of the details as given above.

A Case of Puerperal Diphtheria involving Vagina and Endometrium.

S. L. ELSNER (*Buffalo Med. Jour.*, June, 1898) in attending a confinement case found on the second day after delivery that the nurse had failed to give the bichlorid douche as ordered. An excuse was made, but on the fourth morning there was a slight elevation of temperature, and inquiry revealed that no douche had been given. The doctor requested the dismissal of the nurse, but as she was a good cook she was retained. The following day the patient had a chill followed by a temperature of 103.6° F., with pain in the vagina. Examination showed the entire vagina, cervix, and as much of the cervical canal as could be seen, to be coated with diphtheritic membrane. A culture confirmed the diagnosis. Curetting and irrigations failed to reveal any trouble other than the diphtheria. The next day another chill was accompanied by a temperature of 105° F. Some enlargement was detected on the left side, which was considered to be salpingitis. Antitoxin was given and in three days the membrane had disappeared and no Klebs-Löffler bacilli were found. During the next week her condition was critical, with a temperature ranging from 103° to 106° F. It seemed necessary to operate on the left tube, and while a rather severe vaginal examination was being made the hand of the examiner was found to be covered with blood and pus, and half an ounce of pus was found in the vagina. Following this manipulation the pain and enlargement disappeared and the temperature became normal. On investigation it was found that the nurse had been caring for her own daughter who had a "sore throat" three days previous to the confinement. No doctor saw the daughter.

The author, unfortunately, fails to give particulars as to the location of the pus, or the point of exit.

GREAT BRITAIN.

A Case of Dead Twin retained to Full Term.

DAVID ROSS (*The Lancet*, May 7, 1898) was called by a midwife to see a poor Jewish woman whom she had just delivered. The woman had had five children before, two being twins. During the earlier part of her pregnancy she was positive that she had twins. But in her fifth month, after a fright, a severe metrorrhagia began, lasting three days, and followed by a slight yellowish discharge lasting two months. After that she felt life on the right side of the abdomen, but pain and extreme heaviness on the left. Labor began on February 13th, and on the following evening a dead fetus of about five-months' development was delivered. At 8 A.M. the next day, after a severe labor, a fine, full-time child was delivered. The dead fetus was flattened anteroposteriorly. The skin was pale, moist, and tough, feeling like moist chamois leather. There was no sign of decomposition.

A Case of Spontaneous Rupture of the Uterus During the First Stage of Labor.

HENRY W. J. COOK (*The Lancet*, February 26, 1898) reports a case of a woman in her fourth confinement, whose previous labors had been rapid and normal. She had been curetted for endometritis a year before this last confinement. The pregnancy had been normal, and examination at the beginning of labor revealed a roomy pelvis, the head engaged in the pelvic brim, and the os about the size of a half-dollar. The pains were regular and strong, when suddenly, during a severe pain she became faint and pale and fell to the floor. Her pulse went up to 120, and she vomited. After a hypodermic of brandy she was assisted to the bed, and said the pain was only slight. Her clothing was found saturated with liquor amnii, and there was some blood coming from vagina. Vaginal examination revealed an extensive rent extending from the upper extremity of the vagina up the posterior wall of the uterus almost to the fundus. The intestines could be felt through the opening. The fetus could be felt above through the abdominal wall. Having no other assistance than an untrained nurse, a messenger was dispatched for the nearest doctor, twelve miles distant. The patient was kept alive by stimulation, saline injections, etc. On the arrival of the doctor ether was administered and the child extracted through the posterior rent in the uterus. The placenta was found high up, almost under the liver. The child was dead. The uterus and vagina were douched with a solution of iodid of mercury, the uterus packed with iodoform gauze, and hypodermics of ergotine given. The patient was nearly dead, but rallied sufficiently to talk. She gradually sank, however, and died in six hours. The peculiarity of the case was the lack of apparent cause for the rupture, unless the previous endometritis had affected the uterine wall. Abdominal section could not be attempted in this case, as the patient was so much collapsed.

A Case of Intra-uterine Pulmonary Respiration.

CHARLES KEVIN (*British Med. Jour.*, May 14, 1898) was called at 9 A.M. on April 17th to attend a woman in her fourth confinement. She had been having pains during the preceding night, and at 4 A.M. the membranes had ruptured.

Examination showed the os to be dilated about one-third. It was a head presentation, but the apex of the child's left ear could be felt by sweeping the finger around the os. The doctor left, returning at 10.30. As he sat by the bedside, in the intervals between the pains, a distinct sobbing, smothered cry could be heard. The os was only half dilated. The sound could be heard by the mother and nurse, in fact, it could be heard anywhere in the room. Examination with the stethoscope proved the sound to be most distinct at a point midway between the umbilicus and right iliac spine of the mother. The crying was repeated a number of times, but about 12 o'clock it ceased until 12.30, when two severe pains following each other rapidly expelled the child, face to pubes. It was screaming lustily during the last pain. The cord was pulsating in a marked manner. The placenta was normal, though very succulent; it came edgeways, with a little gush of blood.

The mother, an intelligent woman, stated that she heard the child cry the night before its birth, but the writer can state with certainty that it cried and sobbed for two hours before birth. It could not have been ventriloquism on the part of the mother for the doctor purposely engaged her in conversation while the cry was still proceeding.

CANADA.

The Systematic and Continuous Use of Art in All Cases and Stages of Labor.

JOHN HUNTER (*Canada Jour. of Med. & Surg.*, March, 1898) says that as no event in life is of such importance, or produces such suffering as childbirth, it would naturally be supposed that every obstetrician would avail himself of all possible means of making this process as free from pain and danger as possible. But such is not really the case. A physician who would exhaust every resource for the relief of a patient suffering from gall-stone, will come and go during the progress of a long and painful labor of the same patient, without even endeavoring to mitigate her sufferings. "Such cases are better left to Nature," is his illogical reply. True art never interferes with Nature, but brings all its forces to her aid in an intelligent manner.

Every physician should have full knowledge of all the available resources of his art, and such control of his own mental faculties as to know how and when to give aid. Asepsis should be religiously carried out through the whole puerperal period. The surroundings should be as cheerful and comfortable as possible. Relief from unnecessary and unbearable pain should be attempted by mental diversion, changes of position or anodynes. Every physician should possess the art of making a thoroughly aseptic, scientific, efficient and *painless* examination. Infliction of pain is evidence of ignorance or culpability, or both. And, finally, there should be the earliest possible resort to the use of anesthetics and forceps consistent with the most absolute safety to both mother and child. This last statement will be challenged by many, but from a fairly large practice extending over a quarter of a century, the author does not hesitate to affirm that instruments can be used with the greatest possible freedom without either present or remote danger to either mother or child. Early in his practice he began the use of forceps in nearly every case except where the birth had occurred before his arrival, and not one mother or child suffered any ill consequences, while in many cases not only pain but danger was avoided by the prompt use of instruments.

The Obstetric Binder.

W. J. WILSON (*Canadian Jour. of Med. & Surg.*, June, 1898) speaks of the difference of opinion among medical men as to the value of the binder in obstetric practice, some discarding it altogether. It used to be a common practice to place a book or some hard body beneath the binder as a pad. This was uncomfortable and of little value, as it would slip out of position. It would have some advantage in maintaining pressure and irritation on the uterus, thus stimulating contraction, but it is the duty of the obstetrician to secure firm contraction of the uterus before applying the binder, and if unable to accomplish this the binder is useless. The comparison often made between the woman of civilized and savage races is not fair. The abdominal muscles of the latter are developed by her mode of life, and she has never worn tight clothing. The civilized woman finds her muscular powers exhausted by labor and something to supplement the abdominal muscles is grateful. But aside from comfort the pressure of the binder lessens venous stasis in the pelvic vessels and thereby increases arterial tension. The brain also becomes better supplied with blood. In eclampsia the binder should not be applied. The binder is also an aid to complete recovery by supporting the intestines from below and thus removing some weight from the uterus, until the muscles and ligaments have regained their normal tone. It should always be thin, to allow of its being properly fitted; drawn down below the great trochanters and evenly pinned; it should be frequently changed and a fresh one adjusted.

AUSTRALASIA.

Two Cases of Ante-Partum Hemorrhage.

FELIX MEYER (*Australasian Med. Gaz.*, January 20, 1898) reports two cases of ante-partum hemorrhage, the first of which occurred at the middle of the last month of pregnancy after some effort at lifting. The hemorrhage was free and painless, continuing for about three hours in spite of rest in bed. The os was soft but not dilated. After rest in bed for one week she completed her full term with no further bleeding and was delivered of a healthy child with no more loss of blood than usual. The placenta was torn across by a rent which nearly divided it into two equal parts. The second case was seen by Dr. Meyer in consultation at about the same period in pregnancy. She had had three hemorrhages at about the fourth month, and no more until about four days before Dr. Meyer was called. Since that time she had had repeated hemorrhages, more or less controlled by tamponing the vagina. Dr. Meyer found her very much blanched by loss of blood. Radial pulse hardly perceptible. Os fully dilated with placenta presenting centrally. The placenta was rapidly separated and the child turned and extracted with but little bleeding. The patient was pulseless and cold, but after elevating and bandaging the legs and injecting warm brandy into the rectum (no transfusion apparatus being available) some improvement was obtained. She had some fever, and on the sixth day passed a small piece of membrane. Her recovery was also retarded by phlegmasia of the right leg. The absence of pain, and the complete cessation of bleeding in the first case, make it rather an unusual one.

A Case of Rigid Os Uteri Treated by Hot Baths.

PATRICK W. HISLOP (*Australasian Med. Gaz.*, January 20, 1898) reports a case of a primipara, aged forty, who had been in labor for thirty hours when he

was summoned. The membranes had ruptured twelve hours before, and though the pains were so severe as to force the whole uterus downward, the os uteri was so completely closed that not even a sound could be passed. The doctor had no chloral with him, but warm douches and chloroform were used with no effect. The patient was becoming exhausted. A bath, with the water as hot as the patient could bear it, was prepared, and the patient kept in it for fifteen minutes, during which time the pain ceased. She was then placed in bed and warmly covered, inducing profuse perspiration. Examination now proved the os to be easily dilatable by the fingers. Barnes' bags were used and the child was delivered by forceps. The perineum was rigid in spite of the application of hot fomentations for two hours, and was slightly lacerated, but was repaired by two stitches and healed in a week. The child was feeble and lived only one day.

Delivery at Term, Eight Months after Removal of Both Tubes and Ovaries, with Ventral Fixation of the Uterus.

E. FAIRFAX ROSS (*Austral. Med. Gaz.*, February 21, 1898) reports a case of a young married woman who had suffered for years from pelvic pain and dysmenorrhœa. On admission to the hospital the uterus was found to be prolapsed with a retroflexed fundus. The left ovary was much enlarged, and the right ovary prolapsed and tender. The tubes were normal. Menstruation had been regular. On May 4th the two ovaries were removed and the uterus fixed to the abdominal wall with three buried catgut sutures.

Convalescence was uneventful, and the patient was discharged free from pain. On November 18th she presented herself for examination, frightened by her condition, having been told that she had a large abdominal tumor. She had noticed the increase in size after leaving the hospital, but attributed it to the loss of her ovaries. But as the "fat" increased she became alarmed. On examination she was found to be pregnant and was delivered of a large, healthy child on December 29th, 239 days after the operation. The patient was therefore in the second month of pregnancy at the time of the operation. Care had been taken at the time of operation not to pass the stitches into the uterine cavity, but only into the uterine tissue, not, however, from any suspicion of pregnancy.

PÆDIATRICS.

UNITED STATES.

Cholera Infantum.

H. N. POTTER (*Ann. of Gyn. and Ped.*, April, 1898) recommends the following treatment for cholera infantum: (1) Remove all food for twenty-four hours. (2) Clear out the intestinal tract with calomel. (3) Give a weak intestinal antiseptic solution in large quantities, enough to keep the stomach well filled; if the child cannot be made to swallow it a tube may be used. At the same time the colon should be irrigated with the same solution introduced high from a fountain-syringe through a soft rubber catheter, the idea being to fill the tract thoroughly with the solution. If the vomiting persists the stomach should be allowed to rest

for a time and the treatment be resumed. (4) If stimulants be needed, hypodermic injections of brandy or strychnin should be employed; if there is severe pain external applications should be used, or hypodermic injections of some non-conspicuous therapeutic agent may be given.

Earache and Discharging Ears in Children.

E. P. MORROW (*Atlantic Med. Week.*, April 1, 1898) calls attention to the frequent neglect by parents, and even by physicians, of discharging ears in children: the prognosis must be very guarded, both as to the duration of treatment and as to the child's hearing. The chronic mastoiditis that often succeeds is even more serious than the acute, and so insidious that it may last for years. A case is quoted of a man of twenty who had had a discharging ear from childhood, and who presented all the symptoms of chronic mastoiditis; operation was refused, and six months later he died of convulsions, probably from abscess of the brain. The mastoid operation is not in itself a very serious one, and where intracranial complications have not developed a cure may usually be promised; in acute cases in children a deep incision down to the mastoid, known as Wilde's incision, is often a useful procedure. Much grave trouble may be averted by physicians in warning parents against the neglect of seemingly trifling earaches and otorrheas.

Forcible Straightening of the Spine in Pott's Disease, with Report of Case.

L. FREEMAN (*Ann. of Surg.*, April, 1898) discusses Calot's treatment in Pott's disease. The operation is briefly as follows: The patient is laid face downward upon a table, and while two assistants make extension and counter extension from the head and lower extremities, not usually exceeding 175 pounds, the surgeon presses the balls of his thumbs upon each side of the projecting vertebral spines, counter pressure being made from beneath. A plaster jacket including the head, neck, and chin is then applied. Various modifications of the operation have been adopted by different surgeons. The recumbent position should be retained, according to Calot, in some cases as long as eighteen months; treatment should last from a few months to two or three years according to the passivity or activity of the process when treatment is instituted.

Few dangers attend this method; paralysis or death has occurred in but one per cent. The gap produced by the sudden straightening of the spine is sometimes very large; Calot says, however, that consolidation usually takes place by ankylosis, in moderate cases of the bodies and processes of the vertebræ, in severe ones of the posterior bony structures only; should ankylosis fail, he recommends its artificial production by operation. The danger of meningitis is probably not greater than in breaking up other ankylosed tubercular joints. The most favorable cases are recent ones with small deformity, but old curvatures of large size have been successfully, though rarely completely, reduced. Even if the deformity is not greatly affected the relief from pressure is advantageous. Contraindications are: Very old and firm ankylosis, marked cachexia, pulmonary or other complications, tubercular abscesses or sinuses, extensive deformities of the chest, etc. It is usually better to heal cold abscesses first, though such have sometimes disappeared with *redressement*; on the other hand they have followed it in two cases. In six out of eight cases with paralysis, the paralysis disappeared within ten days.

To recapitulate: "Theoretically the advantages of Calot's methods are: (1) immediate, complete or partial correction of deformity; (2) removal of pressure and irritation from the cord, resulting in some cases in relief from neuralgic and paralytic symptoms; (3) separation of the diseased surfaces of bone, thus avoiding pressure and irritation which are supposed to favor continuance and spread of disease; (4) gain in length of the spine; (5) avoidance of malformation of the chest walls and injurious alteration of the positions of organs.

"The disadvantages which have been claimed are: (1) production of a large cavity which may not fill up with sufficiently firm tissue; (2) non-formation of supporting masses of new bone and consequent weakness of the spine and recurrence of deformity; (3) rupture of tubercular material into the mediastinum; (4) increase of the disease by local injury, separation of fragments of bone, etc.; (5) production of tubercular meningitis, or of general tuberculosis; (6) injury to the cord or to its membranes; (7) production of abscesses."

The author reports the case of a girl, eleven years old, ill one year; examination showed a prominence from the sixth to the ninth spinous processes, inclusive; there was girdle-pain, motor paralysis of the lower limbs, and increased knee-jerks. She grew worse under a month's treatment by plaster mold, developing a bowel and bladder trouble, ulceration of the matrix of one of the toe-nails, and loss of sensation in the peroneal region of the right leg. Calot's operation was then performed, the kyphosis being reduced about three-quarters. The ground lost since treatment was first begun was rapidly regained, and the child's general condition improved. At the end of a month, however, the disease was again gaining; a bed-sore appeared, and sensation became impaired over the lower part of the trunk and limbs. Laminectomy was then done, when a mass of firm tubercular tissue was found pressing upon the cord posteriorly and upon the left side, a condition that forcible straightening would have made worse; two weeks later a quantity of caseous material was discharged and since that time the child has slowly but steadily improved.

Affections of the Conjunctiva and Cornea observed in Acute Infectious Diseases of Children.

B. K. CHANCE (*Ann. of Gyn. and Ped.*, May, 1898), discusses the various ophthalmic complications of the acute infectious diseases, laying the greatest stress upon the phlyctenulæ, which are so liable to develop either during the course of these diseases or as sequelæ; particularly is this true of measles. These phlyctenulæ are aggregations of lymph-cells and do not differ in character whether situated on the corneal margin or conjunctiva; they are, however, more serious in the former place on account of the resulting opacities and scars, and the danger of perforation. In the early stage we may note vessels passing over the cornea toward these phlyctenulæ, these vessels becoming more definitely marked as ulceration occurs, finally to fade away with the formation of the scar; the scar remains visible for a longer time. Several phlyctenulæ in various stages may be seen at once; there is a tendency to recurrence, and the center of the cornea may become affected. Secondary eye affections may follow. Subjective symptoms are photophobia and spasm of the lids, more or less severe. The acid lacrimal secretion may give rise to herpetic ulcerations and excoriations on the face; the phlyctenulæ may occur on the roof of the

mouth and upper pharynx; there may be enlarged lymphatic glands, discharges from the nose and ears—in fact the old “strumous ophthalmia.” If the general disease produces semi-consciousness, the conjunctivæ may become dry.

Treatment consists in frequent flushings of the eyes with warm boric-acid solutions, to which, if the pain or irritation be severe, cocaine may be added, 2 grains to the ounce; at night the lids should be anointed with vaseline. Should pericorneal injection and slight corneal haze occur a mydriatic should be used and the eyes protected, though a dark room is not always necessary. Phlyctenular eruptions demand the same treatment, even more carefully carried out; if ulcers develop atropin should be instilled. Five-per-cent. solution of cocaine will relieve the photophobia. Eczematous crusts should be softened and removed, and the underlying ulcers touched with silver nitrate solution, 10 grains to the ounce. The face may be treated with an ointment of iodoform or yellow oxide of mercury. After the disappearance of acute inflammation and ciliary injection, finely powdered calomel may be dusted into the eye. The nose should be kept cleansed with an antiseptic solution. General hygienic measures should be maintained with as great care as during the acute illness, and tonics and alteratives should be kept up during the entire period. Too much stress cannot be laid upon the importance of the careful treatment of these cases; for while few give rise to actual blindness, very many result in permanently damaged vision.

The Diagnosis of Post-Nasal Adenoids in Children and Their Removal.

C. C. RICE (*Post-Graduate*, May, 1898) calls attention to the fact that many mouth-breathing children are erroneously treated for nasal catarrh—a condition that should never be diagnosed unless enlarged tonsils and post-nasal adenoids can be excluded. The catarrh in these cases is simply due to the accumulation of nasal secretion consequent on the plugging of the posterior nares. Examination of the nose shows no deviation of the septum nor hypertrophies; frequently also there is very little hypertrophy of the faucal tonsils, the symptoms depending solely on the post-nasal enlargement. It is hard to use a rhinoscopic mirror in children, and the writer frequently makes the diagnosis with a Munger curette; we cannot sink the point of the curette into the tissues of a normal pharynx, hardly even scarify them; but a tonsillar enlargement is felt to be soft and spongy, admits the point of the curette, and opposes resistance to the instrument as we draw it downwards. For removal it is best to employ the cutting forceps first and then trim the remaining tissue smooth with the curette. Caution against going too far laterally is necessary lest we wound the orifice of the Eustachian tube. If both faucal tonsils and third tonsil are to be removed an anesthetic should be given, and the bleeding from one source stopped before cutting in the next place. Styptic cotton should be at hand for packing the post-nasal space, though the writer has never found this procedure necessary. Septic infection is rare, and it is better not to syringe the passages for several days; such treatment for any existing rhinitis as seems desirable may then be adopted.

Albumosuria in Measles—History of Resistance to Infection, with Subsequent Contraction of Measles—Purpura in Measles.

J. H. MCKEE (*Philadelphia Polyclinic*, May 7 1898) reports the following cases:

Case I. was a girl of 13 years, who, after eight days of premonitory symptoms developed a typical measles rash. The illness was long and severe, the temperature reaching 114° F., vomiting lasting for a week, and an intractable diarrhea for three weeks. On the fifth day of the eruption examination of the urine showed the absence of albumin, but the presence of albumose, a drop of nitric acid added to the cold urine giving a heavy cloud, which dissolved with heat, to be reprecipitated on cooling; a response was also obtained to the biuret test. In this case, both fever and intestinal disturbance being present, the albumose may have been due to either or both.

Case II. was a child whose exposure to the disease had been a momentary contact out of doors with another case; the remarkable thing being that a year previously he had been completely exposed, being much in the sick-room of his brother, who was suffering from the disease, and developing nothing more than a conjunctivitis; the precaution had been taken to spray the nares frequently, and this, the writer thinks, may account for his former immunity. The same measure adopted in other families has, in a number of instances, limited the disease to the one first affected. Of course this cannot be proven, but seems likely when we consider the great infectiousness of the disease.

Case III. was a child that developed a typical but very general eruption on the fifth day of illness. The next day there was a decided tendency to confluence, and on the back and anterior aspects of the thighs and legs purpuric blotches of various sizes and shapes had developed; there was vomiting, a temperature of 103° F., and expectoration of dark blood, which was found to come from the posterior nares. This marked the height of the eruption, recovery being from that time uninterrupted, though pigmentation persisted upon the back and legs for more than two weeks.

A General Consideration of Mastoid Disease.

S. OPPENHEIMER (*Medical News*, May 7, 1898) says that the prevention of mastoid disease comes under two heads: the cure of chronic suppurative otitis media and the proper treatment of acute otitis media. Mastoid disease may be primary or secondary; the primary form is rare and most frequently due to traumatism, though it may also be caused by exposure, tuberculosis, or syphilis; but mastoiditis following acute tympanic suppuration is always due to secondary infection, so that the etiology and prophylaxis of mastoid disease is really a study of middle ear disease. The use of septic injections, the instillation of oil, or the blowing of powders into inflamed ears is condemned, while syringing should be done only with great care and in a good light. Mastoiditis does not differ from an osteitis elsewhere, and leads either to sclerosis or necrosis; the latter, perhaps, with the formation of a sequestrum. When pus forms, the thick external and thin internal wall of this part of the temporal bone favors rupture into cranial cavity, though it may break externally or escape into the digastric fossa. The symptomatology of mastoiditis is now clearly understood. Pain is a valuable indication, though sometimes its presence or absence may be misleading. The most useful symptom is bulging of the posterior superior wall of the external auditory canal, which is usually sufficient to warrant immediate operative interference. We may also note pulsating tinnitus, sudden cessation of a previous otorrhea, external signs of mastoid irritation (redness, swelling, edema), of con-

siderable early importance, together with the bulging referred to, is perforation of the membrane in its posterior superior quadrant, especially when a fold of the internal mucous membrane projects through the perforation. The constitutional symptoms vary, though much may be learned from them should the brain become affected. To ascertain the amount of bony tissue involved we may employ comparative percussion of the two mastoids with a metallic hammer or a stethoscope over an affected mastoid will reveal impairment of the sound waves when a tuning-fork is struck on the cerebral vertex; also, the glow from a small electric lamp in the meatus is not transmitted through the mastoid if suppuration be present.

Treatment consists in rest in bed, fluid diet, cathartics, early paracentesis if fluid is present in the middle ear, antiseptic irrigation, and cold over the mastoid process for not more than forty-eight hours; after this, operation should not be delayed, the best being that known as Stacké's, in which the auricle is detached along its posterior border, and the cartilaginous canal from the bony one, laying open the posterior wall of the bony canal and the antrum into one cavity; after removing necrotic tissue, the hollow is covered with skirt and a periosteal flap from the external auditory meatus. Wilde's incision is no longer recommended.

Congenital Absence of Anus and Rectum.

R. G. LECONTE (*Ann. of Surg.*, June, 1898) reports the case of a male child six hours old, weighing eight and a half pounds, normal save that there was no terminal opening for the bowel, and that the urethral orifice was at the middle of the under surface of the penis; just anterior to the coccyx there was a small dimple. The catheter drew clear urine. The child was immediately operated on, no anesthetic being given. An attempt was made in the usual manner to reach the rectum through the perineum, but was abandoned after cutting unsuccessfully for an inch and a half. Left inguinal colotomy was then done and the bowel was found distended with meconium; it was drawn up as far as possible from the pelvis, stitched to the abdominal wall and evacuated. Culture test of the meconium proved sterile. The operation took about thirty-five minutes, the child sleeping most of the time; the loss of blood was trifling and there was no shock. The following day there were frequent attacks of colic and diarrhea; after the movements there was protrusion of the mucous surface of the bowel which could easily be reduced. The gastro-enteritis increased, jaundice set in, the temperature rose to 102° F. and on the fourth day the child died. The post-mortem showed that the rectum ended in a blind pouch at the base of the bladder; a blunt probe could be passed from the rectum through the urethra; the intestines were distended with gas, but there was no peritonitis; the kidneys were horseshoe, being fused at the lower ends. This case belongs to a subdivision of the sixth group in Bodenhamer's classification, and is known as atresia ani vesicalis. The diagnosis is usually made by the passage of fecal matter mixed with the urine; the prognosis is unfavorable, and the only treatment, of course, operation; it is not wise to wait for a bulging of the bowel, as this will not occur if the rectal pouch is high, while if it is low the cut is superficial; the distention, moreover, is mostly gaseous, and may give rise to paralysis of the bowel, absorption of decomposition products or peritonitis. The writer thinks it would have been wiser not to pull the bowel so far out of the pelvis, as the upper

part was thus loosely supported and tended to prolapse or intussusception; his idea had been to leave as small a pouch as possible for the retention of fecal matter. Otherwise he prefers the procedures adopted, thinking the opening into the bladder would close spontaneously, or if not could be easily closed later artificially. Death was not due to the operation, but to the heat and lack of mother's milk.

Some Remarks Concerning the Treatment of Whooping-cough.

W. T. PARKER (*Pediatrics*, June 1, 1898) recommends from personal experience the use of quinine in whooping-cough; in his cases the paroxysms ceased in thirty-six or forty-eight hours. The drug should be given in *solution*, 2, 4, or 6 grains to the ounce, a teaspoonful every two hours. Hygienic treatment is also of the greatest importance: the nursery should be thoroughly cleansed, disinfected, and ventilated; patients in towns should go to the shore, and those at the shore to the mountains, though in general sea air seems to be best. Food should be very simple, the diet approaching as nearly as possible to bread and milk. The patients must be isolated; once or twice a week a mild aperient should be given, but they must not be "dosed." Hydrotherapy is also beneficial—the warm bath once or twice a week and a morning sponge every day. Out-door exercise is needful, and careful attention should be paid to the clothing.

GREAT BRITAIN.

Osteotomy of the Femur as a Treatment for Tuberculous Disease of the Hip in Its Early Stages.

R. F. TOBIN (*Lancet*, April 9, 1898) has done the above operation in six well marked cases; three of the cases, seen from six to nine months after the operation walked well with straight limbs; three, operated upon lately, are still wearing Thomas splints; the last case, when examined five weeks after operation showed the fracture firmly united, good position of the limb, only a just perceptible fullness of the joint and no pain. Excluding the question of excision, the writer prefers osteotomy to the usual extension; cases suitable for the operation are those in which there is no evidence of disintegration of the joint, septic abscess or involvement of the acetabulum, and in which, the patient lying down, the affected thigh makes an angle of more than 30 degrees with the bed. The bone is divided from the lower border of the great trochanter to the lesser trochanter; the bone is not quite divided quite through, the remainder being fractured. The patient is then put on his back, the spine held in contact with the table, and the limb depressed till the knee is also in contact with the table. Both limbs are then "dressed" by a straight rod resting on the anterior superior spines of the ilia, and fixed in a modified Bryant's splint. The advantages of this treatment over that by extension are that we have the limb straight and the joint in the best position for rest, *i. e.*, that assumed naturally as shown by the position of the thigh before operation, and last of course by extending the limb without osteotomy. The writer, moreover, believes that the mere section of the bone produces an alteration of its economy that has a salutary effect upon the tuberculous process; his theory is that while tuberculous bone has little reparative energy, resection excites its vitality for the repair of the artificial injury, and that to this re-

newed vitality the tuberculous infection also yields. It has been objected to this treatment that there will be non-union or union at such an angle that the necessary shortening will be greatly increased. The only answer is that of experience; there are but six cases, but in these only a very slight degree of shortening has as yet occurred. The Thomas splint should be worn for a considerable time; even by this method assured recovery is not rapid.

Aneurism of the Abdominal Aorta in a Child.

R. Y. AITKEN (*Ibid.*, April 23, 1898) reports the case of a boy, nine years old, that died of heart disease, in whom the post-mortem revealed an aneurism the size of a golf ball (*sic*) projecting from the anterior wall of the abdominal aorta at its bifurcation into the common iliac arteries; the sac was filled with soft blood-clot, and the opening into the right common iliac artery was blocked by an embolus. The aortic valves were much diseased, one of them being perforated. There were two slightly bulging atheromatous spots in the ascending aorta which were no doubt the beginnings of aneurisms. Injury and embolus are the usual causes of aneurism in children; here it was evidently the latter. In the above case the aneurism gave no symptoms and was not suspected.

A Case of Congenital Hypertrophy of the Pylorus.

H. D. ROLLESTON and L. B. HAYNE (*British Med. Jour.*, April 23, 1898) report the following case in a male child that died at eight weeks of age: At birth the child was apparently healthy, but from the first vomited the breast milk; two weeks later he was put on condensed milk and still later on cow's milk, both of which he vomited. There was constipation and progressive wasting. When the child came under observation there was keratomalacia, most marked in the left eye, and the emaciation was extreme, the weight at death being only four pounds and thirteen ounces. No abdominal tumor could be felt. Nothing abnormal was found at autopsy except that the pyloric end of the stomach was markedly thickened, its length about three-quarters of an inch, and its lumen about the capacity of a No. 4 male catheter. The stomach was a little dilated and its walls thickened in the pyloric neighborhood. Microscopically, the mucous membrane was thrown into folds, there was some catarrh, the submucosa was condensed, and the muscular walls, especially the circular, were hypertrophied.

Seventeen of these cases with post-mortem examinations have been recorded. They have been from three weeks to twenty-four months in age, and have been about equally divided as to sex; heredity plays some part, the lesion tending to repeat itself in the offspring of the same mother. Thompson believes the cause to be nervous incoordination, leading to simultaneous contraction of the stomach and pyloric sphincter, and so to overwork of both.

A Case of Successful Ovariectomy in a Child Four-Months Old.

D'ARCY POWER (*British Med. Jour.*, March 5, 1898) describes the case of a girl four-months old who had suffered for three weeks from swelling of the abdomen. Examination showed an abdomen enormously distended, tense, dull on percussion, except in the left flank, the dulness not altering with position. A three-inch incision was made in the linea alba above the umbilicus; a small quantity of

fluid escaped as soon as the peritoneum was opened, and a large, thick-walled cyst presented; the wall was thin, smooth, bluish, without adhesions, and contained many delicate blood-vessels. About two pints of clear yellow fluid was slowly withdrawn by a fine cannula, when the cyst was raised from the abdomen and the remainder of the fluid allowed to escape through a large incision. The pedicle of the cyst was about the diameter of a slate-pencil; it was divided in the usual manner and returned to the abdomen. The child made a good recovery. Examination of the cyst showed that it was a simple sac; its wall contained one or two thickened nodules that were themselves undergoing cystic degeneration. The total quantity of fluid was about 59 ounces.

A Case of Lymphadenoma involving the Stomach in a Child Aged Eighteen Months, Complicated by Rickets and Closely simulating Leukemia.

H. D. ROLLESTON and A. C. LATHAM (*Lancet*, May 14, 1898) report as follows upon the blood examination and post-mortem in the case of a male child one and a half years old. Very little history was obtainable, except that two months before death a (granulation?) polypus in the right ear had been operated upon, since which time the child had lost flesh and strength, and had "brought up" blood; the spleen was enlarged, and there was a tender swelling behind the right parotid. The blood examination was necessarily somewhat incomplete, but showed a considerable degeneration of red cells, with a large increase in the number of white cells; 500 white cells were counted with the following result lymphocytes, 61.1 per cent.; polynuclear cells, 16.5 per cent.; eosinophile cells 1.6 per cent.; myelocytes, 20.8 per cent.; many of the lymphocytes were of the larger form. The autopsy showed anemia, slight edema of the legs, and a few petechiæ upon the skin. The hard swelling in the parotid region was found to be a packet of glands passing underneath the sternomastoid, somewhat gelatinous from edema; microscopically they showed increase of their fibrous capsules and fibrous tissue, a decreased number of small lymphocytes, but a good many large ones. There were marked, rickety curves in the tibiæ, and enlargement of the wrists. The ribs showed prominent, rickety enlargements at their costochondral junctions, and microscopically an excess of lymphocytic infiltration at these places and in their shafts. The lungs showed early bronchopneumonia; the heart and the bronchial and tracheal glands were healthy. The outside of the stomach presented near the lesser curvature a few plaques of white growth. Scattered all over the mucous membrane except for a distance of about an inch from the pylorus were a number of polypoid growths, smooth, white, non-ulcerated, the largest ones being packed near the cardiac orifice, and equal in size to a small walnut; microscopically these growths were made up of folds of mucous membrane infiltrated with large and small leucocytes; they contained some spindle-shaped connective tissue, apparently derived by proliferation of the normal lymphoid tissue of the mucosa. There were some small white nodules in the second and third parts of the duodenum, at the lower portion of the ileum a few enlarged and superficially eroded Peyer's patches, and in the rectum a single sessile growth. The mesenteric and aortic lymphatic glands were normal, but there were pigmented glands along the iliac arteries and along the splenic artery at the hilum of the spleen. The spleen was much enlarged, weighing eight ounces, and on section, was tough, reddish and uniform; microscopically the pulp was filled with large and small lymphocytes. The kidneys, apparently normal, showed

microscopically a few small foci of large and small lymphocytes, some lymphadenomatous growths, and some blocking of the capillaries with lymphocytes. The liver was somewhat enlarged, swollen, and pale on section, and there was a large white gland in the portal fissure; microscopically, there was an excess of lymphocytes in the capillaries, as in early leukemia, and in the portal spaces and outside the capillary vessels there was an early lymphadenomatous growth composed of lymphocytes and young connective-tissue cells.

From the morbid anatomy the case would appear to be a remarkable one of lymphadenoma, beginning in the cervical glands from poison that had gained entrance to the lymphatic system from the abraded surface of the right tympanum, and becoming general with special localization in the alimentary canal, chiefly the stomach. Lymphadenoma in so young a case has never been reported; another peculiar fact is that the growth avoided the pyloric end of the stomach where the lymphoid follicles are normally most developed. From the blood examination, however, the case would appear to be one of lienomyelogenous leukemia; the eosinophile cells were few, but their part in this disease is now considered unimportant. Rickets would explain the anemia accompanied by lymphocytosis, and a small percentage of the myelocytes, but the large percentage found would correspond only to leukemia. Part of the lymphocytosis and the few polynuclear cells might be accounted for by the age of the child. Had the disease been leukemia throughout there ought to have been more marked leukemic infiltration of the liver and kidney, corresponding to the large polypoid growths in the stomach, supposing the latter to be due to lymphocytic infiltration. The fact, however, that the capillaries of the liver and kidneys were in places filled with lymphocytes, would support a diagnosis of early leukemia; but this disease is very rare in infancy, only one case of the lienomyelogenous type having been reported. The case, also, may have been primarily one of Hodgkin's disease which had later taken on the characteristics of leukemia. It may be that at the end of lymphadenoma an invasion of the blood occurs, producing an appearance of lymphatic leukemia, analogous to the invasion of the blood and apparent lymphocytosis that occurs in sarcoma. (This suggests interesting relations between lymphadenoma and leukemia, and, also, between lymphadenoma and sarcoma; the more suggestive from Muir's conclusion that the changes in both forms of leukemia are due to the proliferation of a certain cell, perhaps under the action of some irritant, in a manner similar to what is found in sarcomata.) But we have no evidence that lymphadenoma ever goes on to a lienomyelogenous leukemia, while we do know that strange variations take place in the blood of a child. The authors conclude, therefore, that the case was one of aberrant lymphadenoma, in which changes simulating lienomyelogenous leukemia had been induced by marked rickets. Rickets would account for the anemia and lymphocytosis; there would be no increase in the eosinophile cells, and, indeed, their number was practically normal; the relatively small number of polynuclear cells we may lay to the child's age. The myelocytes then remain to be accounted for, only a very small percentage of which is common in rickets; in this case the large number may, perhaps, be explained by the infiltration of the rib-marrow with lymphadenomatous material, in conjunction with the rickety condition, acting as an irritant to cause proliferation of the bone-marrow cells, *i.e.*, the myelocytes.

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ANALYSIS OF ONE HUNDRED CASES OF LARYNGEAL
DIPHTHERIA, INCLUDING FORTY-SEVEN
INTUBATIONS.

BY ROSA ENGELMANN, M.D., CHICAGO, ILL.,

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Hennoch, in 1892, declared that "inflammatory croup exists, having nothing to do with diphtheria, although because of the endemic nature of diphtheria, diphtheritic croup was excessively more prevalent than inflammatory croup." With the passing of years this opinion was disputed, and the dictum "no Klebs-Loeffler bacillus, no inflammatory croup;" as prominently promulgated as "no microbes, no pus." But upon the arrival of the cultural diagnostic and anti-toxin era the more moderate view of our wise pediatric Nestor again obtains.

The etiologic entity of croup is by no means established, nor will it be until patient research shall have added to our knowledge of the association and cultural peculiarities as affecting morphology, growth, benignancy, malignancy, inter-relation, and septic qualities of the germs commonly concerned in throat lesions. The future may disclose the polymorphism of the Loeffler bacillus, and thus establish the homology of these several affections. At present the heterogenetic theory prevails.

Croup often complicates measles and scarlet fever. Hennoch publishes eight such cases in scarlatina. In this disease a contemporaneous diphtheritic infection is advocated. Again, Hennoch, Prudden, Hallock, Martin, and Baker report diplo- and streptococcal croup having no relation whatever to scarlatina. I add quite a num-

ber of cases to this category, and one case of streptococcal croup complicating measles in a six-year-old girl who wore a tube for four days. Stevens reports ten intubated cases of non-diphtheritic croup, three of which were found in measles.

I no longer believe that certain definite symptoms pertain absolutely to a Loeffler, a strepto-, or staphylococcal infection because first, of the possible polymorphic character of the Klebs-Loeffler germ, second, because a pure form of the one or the other infection or disease so seldom exists. Growing investigation has made the question of etiologic diagnosis more complicated.

Thorwald Madsen recently noted that the Klebs-Loeffler germs from the sediment of old cultures hardly stain, and are difficult to differentiate from micrococci. He looked upon them as disintegration products. In old alkaline cultures taken from diphtheritic membrane it has been found difficult to differentiate the cocci, like short chains of the Klebs-Loeffler bacillus from the streptococcus *brevis*. The matter of culture media, whether artificial or in the throats of patients, must likewise receive attention.

Cultural alkalinity, excessive membrane formation, and toxicity have been experimentally proven parallel, in contradistinction to acidity, slight or no membrane formation, and atoxicity.

Without inoculative confirmation, in at least the doubtful cases, it can be seen how easily the microscopist may be deceived by these coccic forms of the Klebs-Loeffler, or so-called true diphtheria, germ. Clinical findings seem to be in line with the present unsettled aspect of the experimental work. For instance, in many of my worst cases of croup, repeated cultures failed to demonstrate the Klebs-Loeffler bacillus, either alone or associated. The streptococcus alone was found in three cases; the staphylococcus in five; streptococcus and staphylococcus in four, and the two associated with the Klebs-Loeffler bacillus in eighteen cases. Many of these patients reacted decidedly to antitoxin and transferred the contagion to other members of the family, who likewise were favorably influenced by the exhibition of this remedy. The association of these several germs has a material bearing upon the course of diphtheritic croup. Roux, Martin, and Funk experimentally increased the virulence of the Klebs-Loeffler bacillus by association with the streptococcus *erysipelatis* and *pyogenes*. Schreider substantiated this claim, while Funk proved that the heightened malignity of the clinical manifestations was due to the excessive toxicity of the Klebs-Loeffler products in such a mixed culture. They all agree as to difficulty of obtaining successful

results with antotoxin alone in such a mixed infection, and strongly advise the use of a mixed serum.

Bonhoff has strengthened the position of the preceding authorities, and has shown that the course of the disease is not only prolonged, the prognosis made more serious, but that this microbic association has a more deleterious effect upon the kidneys than the streptococcus alone. In fact, inoculating with the latter had no effect whatever upon these excretory organs.

Werneke and Roux verified this conclusion and produced nephritis by inoculation with the diphtheria toxin. Some authorities believe that the streptococcus pyogenes is constantly and coordinately found with the Klebs-Loeffler bacillus in diphtheria and croup.

Changes of temperature, especially lowering of the same, have a very deleterious effect upon a diphtheritic intoxicated animal. This fact must materially affect the type of disease in man, as well, as in a great measure, account for the usual climatic topography and seasonal distribution. In my series of one hundred cases the maximum number were found in February, October, January, March, November, and December, and the minimum in August, June, April, July, and September, in the order named.

NO. OF CASES INTUBATED.		NOT INTUBATED.	TOTAL.
January.....	5 +	7.....	12
February.....	7 +	7.....	14
March.....	3 +	8.....	11
April.....	2 +	3.....	5
May.....	2 +	5.....	7
June.....	2 +	2.....	4
July.....	5 +	1.....	6
August.....	0 +	3.....	3
September.....	4 +	3.....	7
October.....	4 +	8.....	12
November.....	6 +	4.....	10
December.....	7 +	2.....	9
	47 +	53 —	100

Sex plays an unimportant rôle, although a preponderance of males (59) is shown in my series.

INTUBATED.	NOT INTUBATED.	TOTAL.
35 males.....	24 males.....	59 males.
12 females.....	29 females.....	41 females.
		100

Age is a decided factor. Croup in sucklings is rare. Under one

year of age recovery is uncommon. Nevertheless I treated nine (9) cases under one year of age with a 44.45 per cent. recovery, or 55.55 per cent. mortality-rate. In a total of 4 cases not intubated of 8, 9 (2), 11 months old, respectively, 3 recoveries and 1 death took place. In a total of 5 cases intubated of 8, 9 (2), 10, and 11 months old, respectively, 1 recovery and 4 deaths occurred. This is a fairly favorable record.

The following tables agree with other statistics as to a lessened mortality with increasing age:

Eight intubation cases (4 recoveries and 4 death) under 2 years: 30 per cent. recoveries and 50 per cent. deaths; seven non-intubation cases (4 recoveries and 5 deaths), 57.15 per cent. recoveries and 42.85 per cent. deaths. Or a total of 15 croup cases under 2 years: 53.33 per cent. recoveries and 46.77 per cent. deaths.

		CASES.	DEATHS.	RECOVERIES.	PER CENT. DEATHS.	PER CENT. RECOVERIES.
Under 3 yrs.	10	Intubated	5	5	50	50
" "	11	Not "	4	7	36.33	63.67
Total,	21		9	12	42.86	57.14
At 3 yrs. and under 4 yrs.	6	Intubated	2	4	33½	66½
At 4 yrs.	8	Not "	3	5	37.50	62.50
Total,	14		5	9	35.71	64.29

At and under 5 years there were 8 cases with no deaths, or 100 per cent. recoveries. Of the 5 and 6 to 13-year-old intubation cases there was a 20-per-cent. death and 80-per-cent. recovery-rate. Of the 5 and 6 to 13-year-old not intubated cases there was a 27.27 per cent. death and 72.73 per cent. recovery rate. Two cases of 27 years of age, not intubated, recovered, *viz.*, 100 per cent. The entire mortality for 100 cases of croup, for all ages inclusive, is 31 per cent., while for the 47 intubated cases it is 38.29 per cent., and for the 53 not intubated cases it is only 24.42 per cent. Not an excessive mortality when one considers that the majority were slum cases with poor environment and almost no care.

The day upon which antitoxin was given had a more appreciable effect upon the cases not intubated than upon the cases intubated. In the former surprisingly good results were obtained as late even as the fifth and thirteenth days. The mildness of the type of the disease and the age of the patients may have modified this influence. Of the intubation cases that should have promised recovery one was ill only thirty hours when intubation was done. Repeated antitoxin

dosage, proper stimulation and tracheotomy failed. It is generally taught that early administration of antitoxin and intubation offers the best prognosis. In the following table note the equality of deaths and recoveries upon the first and second day as contrasted with a preponderance of recoveries upon the third and fourth or *late* days of the disease.

Antitoxin was given to all cases whether early or late, but I must confess to an error in judgment in giving it to three practically moribund and septic patients.

INTUBATED.		
DAY.	DEATHS.	RECOVERIES.
1st.....	2.....	2
2nd.....	3.....	3
3d.....	3.....	6
4th.....	3.....	10
5th.....	1.....	1
6th.....	2.....	1
7th.....	2.....	1
8th.....	1.....	1
10th.....	1.....	1
11th.....	0.....	2
Unknown.....		1
	18	+
		29 = 47 cases.

NOT INTUBATED.		
1st... ..	0.....	2
2nd.....	2.....	6
3d.....	1.....	8
4th.....	4.....	4
5th.....	2.....	7
6th.....	1.....	5
7th.....	1.....	2
8th.....	0.....	3
9th.....	1.....	2
13th.....	1.....	0
Unknown.....	0.....	1
	13	+
		40 = 53 cases.
		100

The history of some of the more interesting cases follows, and in a few the cause of death is explained. Again, some are instructive from the fact that the astonishing recoveries are inexplicable, of many day's standing.

Case I. (No. 14 in the table.)—Libbie M., 2 years and 3 months

old, a healthy, well-nourished girl, whom I had previously seen for urticaria and some gastro-intestinal disturbance.

First visit made 2 P.M., April 2, 1897. Sick thirty hours. Respiratory embarrassment was so rapidly progressive that intubation was immediately done. Before my arrival the child had received an unknown dose of antitoxin, to which I added 5 c.c. of No. 6. The first culture showed staphylococcus; second culture, two days later, April 4th, showed the Loeffler bacillus and streptococcus. Five c.c. of antitoxin and 10 c.c. of antistreptococcic serum were administered. The urine was normal. Pulse, 120; temperature, 101.8° F.

April 5th. Morning temperature, 99.5° F.; pulse, 96.

Evening temperature, 98.2° F.; pulse, 100; respiration, 30, easy.

11.30 P.M. Coughed up the No. 2 tube worn 8½ hours; membrane was also expelled. She was very cyanotic and collapsed at 12.15 A.M., April 6th, when the tube was replaced. Without the tube three-quarters of an hour.

Antitoxin administration I believe causes local turgescence which until it subsides is in laryngeal diphtheria an added source of danger in the absence of the tube. Likewise rapid membrane exfoliation obstructing the tube causes its expulsion at this most critical time. There were some peculiar erythematous patches around the site of the first injection.

April 6th, 10 A.M. Temperature, 100.4° F.; pulse, 114. Five c.c. of No. 4 antitoxin was given.

April 7th, 6.30 A.M. Coughed up the tube, worn 18¼ hours, completely filled with a semigelatinous, non-tenacious substance, probably dissolved membrane, for no shreds appeared later. Without tube one-half hour.

7 A.M. When tube was replaced the child was almost asphyxiated and cold. Rapid reaction. Temperature, 101.8° F.; pulse, 150.

6.30 P.M. Temperature, 103.6° F.; pulse, 150.

I began to fear trouble ahead.

April 8th, 2 A.M. A giant urticaria appeared involving the entire body. Face and lids enormously puffed up. Neck swollen even with the angles of the jaw, so seriously affecting respiration that the tube did not fulfil its function. There was doubtless edema above and below it. Dr. A. M. Thorpe, who had given me great assistance in this and a previous case, saw this child at my request and reported no immediate danger. Nine hours later, at 11 A.M., the child was delirious, scarlet, swollen beyond recognition, panting for breath. Pulse

and respiration were too rapid for a count. Temperature, per rectum, 107° F. She was packed in sheets continually flooded with cold water, rubbed with ice, and ice applied to the head. Iced colonic flushings were likewise given. She sucked voraciously at the ice-pellets placed in her mouth. Nitroglycerin, strychnin, and brandy were hypodermically administered. In twenty minutes the temperature was reduced to 101.2° F., and the pulse 100. True, the respiration was still sighing and the body blue, but at 2 P.M., or in three hours, the thermometer registered 100, the respiration was 48, and the pulse 180, but regular. There had been an absolute loss of respiratory and circulatory control. Infected antitoxin was unquestionably the cause of it, for neither previous nor later doses had any such deleterious effect. Consequently idiosyncrasy can be excluded. Profound toxemia, affecting the respiratory, thermogenetic and cardio-inhibitory centers evidently obtained.

Since writing the paper, I have learned that the father suffers from asthma. A seven (7) months' old brother has recently come into my hands suffering from asthma. So that the tendency to spasm may have had some bearing upon the above case.

April 9th, 5 P.M. Coughed up the tube. Great dyspnea and depression. Tube worn 57 hours; without it 1 hour.

6 P.M. Retubed. Generalized edema and urticaria disappearing.

April 10th, 1 P.M. Tube expelled with glairy mucus; no membrane. Worn 19 hours; without tube 2 hours.

3 P.M. Intubated with a large No. 3 tube.

April 11th, 11 A.M. Coughed this large tube, worn 20 hours, into the post-nasal space, from whence it was extracted with difficulty by a neighboring physician, who refused to reinsert it. The child was almost moribund when I arrived at 1 P.M. Without the tube three hours, when I temporarily placed a No. 4, or still larger tube, in a 2-year-old child, wishing to reduce the laryngeal edema by pressure as well as by the length of the tube to get above and below the edematous tissues that were preventing aeration. In two hours, when reaction was established, tracheotomy for edema, not membrane, was performed by Dr. Bayard Holmes. No visible membrane. Some mucopurulent discharge from the tracheotomy-tube. A culture made therefrom showed streptococcus, staphylococcus, and Loeffler bacillus. This tube was clear most of the time and the breathing comfortable.

April 12th. Sent to Cook County Hospital where bronchopneu-

monia developed, and from which and sepsis, I was told, the child died.

Case II. (No. 6 in table.)—Babe S., 7 months old. Called November 19, 1896, to see the child suffering from a mild coryza and intestinal catarrh. The fauces were slightly reddened and there was a little cough and rough breathing. The temperature was a little above normal. Morning temperature, 101.6° F.; evening temperature, 99.2° F. Believing this to be a case of grippe, I gave it no further thought, nor did I make a culture. It has since occurred to me that this might have been the beginning of a so-called mixed pneumonia in which the Loeffler bacillus and streptococcus might have been demonstrated. November 20th the child was bright and comfortable, grasping the outstretched hand in normal baby fashion. Calomel had been given; the temperature had fallen to 99° F.

November 21st the child was reported better. November 22d the nurse told me it had been croupy all night and asked me to see it at once. When I arrived, at 2 P.M. of the fourth day, the babe was so dyspneic and cyanotic that intubation by Dr. Morgenthau was done and 1600 units of antitoxin given. Calomel sublimations and free stimulation were ordered. After recovering from the exhaustion incident to placing the tube, the pulse and respiration were good. From the membrane and mucus coughed up a culture was made that showed pseudo-diphtheritic bacillus, strepto- and staphylococci. At 5 P.M., breathing comfortably, looks well, slept a couple of hours; 7 P.M., labored respiration, took milk and brandy that were being regularly administered; 9 P.M., coughed up the tube, respiration labored, calomel sublimation, pulse 120, respiration 60, temperature 101.6° F.

November 23d, 1 A.M., sleeping quietly; 1.10 A.M., the nurse noticed that the breathing was shallow and the child almost pulseless; free stimulation, but no reaction; no struggle, dyspnea, nor cyanosis; died 1.20 A.M. No necropsy permitted. Death was probably due to cardiac paralysis from insidious, but none the less profound, toxemia, since no diagnosis was made until the fourth day of the disease, and the child died within twenty-four hours after antitoxin administration. The insidious onset so obscured the diagnosis that late treatment proved futile.

Case III. (No. 8 in the table.)—James L., Italian, 2½ years old; I saw for the first time December 17, 1896. The following history was elicited: Previous health good, father syphilitic, as learned from the family physician; child robust and well developed; had been ill

one day; primary laryngeal involvement; severe stenosis; temperature, 101° F.; pulse, strong and full. At 5 A.M. I injected 5 c.c. of No. 6 antitoxin. At 11 A.M. No. 1 tube was inserted; it was expelled after three-hours' retention, at 2 P.M., and we thought it to be too small. At 4 P.M. reintubated with No. 2 O'Dwyer tube; culture showed the presence of Loeffler bacillus and staphylococcus pyogenes.

December 18th. Injected 5 c.c. of No. 6 antitoxin and 5 c.c. of antistreptococcic serum. After each antitoxin injection the temperature rose 2½° F., dropping the same number of degrees within eighteen hours. At 4 P.M. the tube was coughed up, with membrane, having remained in place twenty-four hours; 5 P.M., reintubated.

December 19th. At 9 A.M., seventeen hours later, tube expelled; 9.30 A.M., reintubated; 8.30 P.M., eleven and one-half hours later, tube again coughed up; 9.30 P.M., reintubated.

December 20th. At 5.30 P.M. tube expelled, retained twenty hours; reintubated at 8 P.M.; pulse, 150; temperature, 102.8° F.; administered 5 c.c. more of No. 5 antitoxin.

December 21st. At 3 A.M. child suddenly became dyspneic, cyanosed, and convulsed in its effort to expel the tube; some membrane appeared with the tube, the boy being strong enough to cough up the tube with, and ahead of, the membrane that doubtless had been occluding it; tube retained but nine and one-half hours; 4.30 A.M., replaced tube; retained eighteen hours; 10.30 P.M., tube expelled; retained five and one-half hours.

December 22d. At 5 A.M. inserted a No. 3 tube, thinking that the edema had subsided to some extent and that pressure would hasten its disappearance. Five c.c. of No. 4 antitoxin was given, 6500 units having been injected within six days. Later experience taught me that the antitoxin should have been more heroically and rapidly administered.

The diphtheria bacillus and staphylococcus were now associated with the streptococcus. Albumin appeared in the urine, remaining until the eleventh day of the disease, when it finally vanished. The No. 3 tube now remained *in situ* four days and five hours, then, on December 27th, at 10 A.M., I removed it for cleansing, it having been worn ten days. It seemed to me about time for its permanent removal, but the boy was comfortable without it only three or four hours, respiratory difficulty increasing until, twenty-one hours after its removal, reinsertion became imperative; temperature, 100.8° F.; pulse, 95; child taking nourishment well.

December 30th. At 3 P.M., or three days and five hours later, I extubated, fearing loss of resiliency and ulceration of the laryngeal wall; 6 P.M. reintubated for what seemed to be laryngeal and bronchial spasm. Whistling râles were heard over the entire chest; temperature, 100.4° F.; pulse, 90; respirations embarrassed. A culture was taken which revealed the presence of bacillus lanceolatus. To my mind this threatened pneumonia, for in quite a number of my cases this bacterial report had been significant.

December 31st. Temperature, 101.6° F.; pulse, 120, and irregular; physical examination revealed a bronchopneumonia.

January 1, 1897. Pallor; cyanosis; cold extremities; pulse, 120, and regular; temperature, 100.8° F.

January 4th. At 3 A.M. the tube was again expelled. It had remained in place four days, nine and one-half hours; 4.30 A.M., tube replaced; 8.30 A.M., four hours later, it was again expelled; temperature, 99.2° F.; lungs clearing; 11 A.M., intubated; tube retained four hours, and was again coughed up; 4 P.M., reintubated; retained only three hours, and at 7 P.M. was again expelled. A No. 4 tube was now easily inserted, meeting absolutely no resistance. I was well aware of the danger of so large a tube, but apnea was threatened after each expulsion, and the father so dreaded this occurrence that he had learned to press back the tube which now rose with every expulsive effort.

January 5th. At 4.30 P.M. the boy strangled, and was so nearly asphyxiated that the father pulled out the tube. From its large size it was probably being impacted in the post-pharyngeal space. The larynx was undoubtedly so lacerated that it had become intolerant of the foreign body.

January 6th. At 12.30 A.M., ten hours later, reintubated with a No. 3 tube, although from the stretching of the parts I feared it might slip down into the trachea. A culture from the tube showed Loeffler bacillus and staphylococcus; temperature, 100.4° F.; pulse, 120.

January 8th. At 12 M. the lungs appeared to be normal; temperature, 101° F.; pulse, 120; removed the tube after a retention of three days, seven and one-half hours; 2 P.M., replaced the tube as asphyxiation was imminent; no albumin in the urine; tracheotomy was advised, but refused by the parents.

January 9th. At 4.30 P.M. 5 c.c. of No. 4 antitoxin was injected. Up to this time 7500 units had been administered, but, as I now believe, not nearly enough, since upon this, the twenty-third day of the

disease, the diphtheria bacillus still remained. The child had readily learned to drink inverted but at each and every draft almost suffocated.

January 10th. Child playing.

January 11th. At 10.20 A.M. removed the tube to cleanse it; 10.25, gasping for breath; 10.30, dead before I could replace the tube or open the trachea.

Having gained the consent of the father, and in order to explain the cause of sudden death, we removed the larynx entire. Upon looking down past the vocal cords we could see absolute approximation of the subglottic walls, due to ulceration and loss of substance of the subglottic space. Another ulcer was seen in the right vestibule and still another of the posterior laryngeal wall. The laryngeal side of the epiglottis was about destroyed. Unfortunately, the specimen was lost. Thus were the symptoms and unfortunate termination accounted for.

Case IV. (No. 10 of the table.)—Is notable because of a seeming reinfection and a reintubation after a ten-days' freedom from a tube. Jennie B., 2 years old; ill three days; tonsils and larynx involved; temperature, 100.2° F.; stenosis.

January 16th. Intubation; given 5 c.c. of No. 6, 2 c.c. of No. 5 antitoxin, and 5 c.c. of antistreptococcic serum.

January 18th. Extubated in order to convince myself that the period of wearing the tube could be shortened; for in a series of six of my cases it had been worn respectively 2½ days, 3 days, 3 days and 3 hours, 4 days, 5 days, and 6 days. That it could not be effected in this instance was conclusively demonstrated, since a reintubation was performed within half an hour; culture showed diphtheria bacillus.

January 19th. 10 A.M., temperature 100° F.; breathing more labored than at the time of the first intubation, due to a complicating bronchitis; temporary anuria, but no albumin.

January 20th. Final removal of the tube.

January 22d. Father reports that the child is well; culture, Loeffler bacillus.

January 24th. Culture showed Loeffler bacillus, but very few and not characteristic.

January 26th. Child hoarse again and coughing.

January 27th. Bacillus lanceolatus was found, but no Loeffler bacillus.

January 28th. Bronchopneumonia and patches of membrane on the tonsils.

January 29th. Streptococcus and staphylococcus; a severe stenosis requiring reintubation; gave 5 c.c. No. 6 antitoxin.

February 1st. Sent to isolation hospital in care of Dr. F. W. Gillespie, to whom I am indebted for the subsequent detailed report.

Loeffler bacillus again found, and 1500 units of antitoxin was injected. On February 2d, when the tube was removed, having been worn five days, pulse, temperature, and respiration were normal. The child was discharged on February 11th, having made an uninterrupted recovery.

Case V. (No. 5 in the table.)—John K., 2 years, 3 months old; sick six and a half days. Stenosis and sepsis profound; no visible membrane. Expelled the No. 2 tube repeatedly. Dr. Thorpe replaced it, and finally placed a No. 3 tube, that gave no relief, for the process had descended to the bronchial tubes. Called in Dr. Holmes, who considered tracheotomy useless. Streptococcus was shown in three cultures, as in also that of his baby sister, who was sick (with hoarseness and slight temperature) for four hours only, when antitoxin was given. She was absolutely well the next day, having decidedly reacted to antitoxin. John had received 7000 antitoxin units and 10 c.c. antistreptococcic serum. Had more of the latter been given perhaps I need not have signed his death certificate.

Case VI. (No. 4 in the table.)—Died because parents would not permit a second intubation.

Case VII. (No. 7 in the table.)—Died from sepsis, unskilled and unsuccessful attempts at intubation. One of my first cases.

Case VIII. (No. 17 in the table.)—Showed a most astonishing course and recovery. Richard F., 6 years old; severe primary laryngeal involvement from the Klebs-Loeffler bacillus. Sick five days, and when I arrived after midnight, was practically moribund. Placing the gag stopped the breathing and pulse. As soon as the child revived a little by hypodermatic stimulation and the performance of artificial respiration, by a neighbor whom I had rapidly taught, I succeeded in placing a No. 5 tube. In fifteen minutes the boy was comfortable, and in nine hours and fifteen minutes coughed up the tube, much to my surprise, not needing a reintubation. He received 4000 units and made an uninterrupted recovery.

Case IX. (No. 19 in the table.)—Swallowed the tube which has never been recovered. Boy Teretelle, 11 months old; sick four days. Almost suffocated until the tube was inserted at 11 A.M. At 8 P.M., in

coming into the house, heard the child's voice sounds and asked the parents if the child had a coughing spell or had vomited up the tube. A negative answer was given. Through the esophagus I thought I felt it pushed down into the trachea, and Dr. Thorpe agreed with me. Next morning we made unsuccessful attempts at its supposedly necessary extraction, and failing, called in Dr. Casselberry to assist us. He advised and did a tracheotomy, but could not find the tube, nor at the end of ten months has it ever been found, in the stools or in the house.

In two other cases where the tube was swallowed after expulsive efforts, the tubes were passed, shortly appearing in the feces.

Case X. (No. 26 in the table.)—George L., 2 years old; sick four days. Tonsils, uvula, and larynx affected. Very severe stenosis. Intubated with No. 2 tube at 12.30 A.M.; it was expelled without being blocked twelve hours later. No tube worn for five hours, when urgent dyspnea necessitated reinsertion. I placed a No. 3 tube that did not seem to be doing much good, but removed it at the solicitation of the attending physician eight and three-quarter hours later. There was marked retraction of the head and a beginning right upper lobe pneumonia that he thought was due to atelectasis from pressure of the tube. I did not believe that a No. 3 tube was long enough to produce this effect, but thought the cephalic retraction and muscular twitching were caused by the great amount of strychnin administered, and by the great diphtheritic toxemia, producing likewise the interstitial pulmonary changes dwelt upon by Klebs. The laryngeal spasm was also of toxemic origin, I believe. The boy had received 3500 antitoxin units; twelve hours after the last dose it relieved this laryngeal spasm, and in twenty-four hours the probable diphtheritic right-sided bronchial involvement as well. In this, as in other of my patients, I learned that when membrane extended below the tube, the latter gave no relief, and that recovery depended upon the resistance of the patient and the reaction from adequate antitoxin dosage.

Case XI. (No. 39 in the table.)—Was another unexpected and surprising recovery. Wilhelm K., 1 year and 9 months old. Although sick eleven days with fearful nasal, faucial, and laryngeal implication, and marked asthenia and emaciation. After the administration of 7000 antitoxin units and an intubation of only five-days' standing, the child recovered without a single complication, in spite of his extreme youth and the excessive toxemia.

Case XII. (No. 34 in the table.)—One year and four months

old. Sick only four days; most unexpectedly died of heart failure after the tube had been worn but $59\frac{1}{2}$ hours, or 2 days and 11 hours, with two expulsions. Breathed comfortably for ten hours after the removal of the tube, when temperature and pulse rose alarmingly, and the babe suddenly died. But 4000 antitoxin units had been given, possibly too late. Moreover, I had no control of other medication. This, also, may have been one of those insidious cases recognized too late for help.

Case XIII. (No. 43 in the table.)—George F., ten months old. Sick nine and one-half days with nasal, faucial, and laryngeal diphtheria, when antitoxin was first given, and laryngeal stenosis being pronounced, an intubation was done; neither streptococcus, staphylococcus, nor Klebs-Loeffler bacillus were demonstrated. This child died of sepsis and probable nephritis; for the tube gave material relief.

Case XIV. (No. 29 in the table.)—Fred. G., four years old. Sick five days with nasal, faucial, and laryngeal diphtheria. A No. 3 tube did not relieve the suffering and I concluded that there was a diphtheritic trachitis and bronchitis that even tracheotomy would not relieve. The latter operation was done at Cook County Hospital, where he died from sepsis and bronchopneumonia.

The above-mentioned astounding recoveries after late antitoxin administration and intubation offer a brilliant contrast to such a majority of fatalities after early antitoxin administration and intubation. My statistics in the first-mentioned respect present recoveries in a eleventh sick day, 1-year-old; a eleventh sick day, 1 year and 9 months old; a seventh sick day, 3-year-old; a fourth sick day, (1) 1-year-old, (2) 2-year-old, and (2) $3\frac{1}{2}$ -year-old patients; and sixth sick day, 3-year-old, and tenth sick day, 2-year old patients.

In four sections for primary membranous croup by Fraenkel he demonstrated a primary bacillary and clinical genesis. It is questionable, nevertheless, whether a classification into primary and secondary croup is tenable; for an undisclosed nasopharyngeal focus of disease is the probable source of infection in the first-named condition. A rapid bacillary invasion and descending laryngitis may obscure this derivation and produce such sudden laryngeal edema that stenosis occurs before membrane has time to be formed or a culture made. Twelve primary and 41 secondary cases, or a total of 53 not requiring intubation, as opposed to 15 primary and 32 secondary, or a total of 47 cases requiring intubation, reinforces antitoxin therapy.

There were 15 cases of primary laryngitis requiring intubation and 12 cases of primary laryngitis not requiring intubation, or a total of 27 primary cases.

There were 32 cases of secondary laryngitis requiring intubation, and 41 cases of secondary laryngitis not requiring intubation, or a total of 73 secondary cases.

Vierordt's comparisons as to the occurrence of secondary laryngitis in the pre-antitoxin and post-antitoxin periods in 23 and 24 cases, respectively, establish that in the first epoch 9 cases appeared, while not one did so in the second, although one child developed a slight cough three days after antitoxin was given.

A mild type of disease was manifest in	2	primary cases.
“ moderate “ “ “	13	“ “
“ severe septic stenotic “ “	12	“ “
“ mild type of disease “ “	4	secondary cases.
“ moderate “ “ “	12	“ “
“ severe septic stenotic “ “	57	“ “

The greatest number of times a tube was expelled in any one case was 19, the next 6, and 4 times in 2 cases, 3 times in 10 cases, twice in 14 cases, and once in 3 cases. In all other cases it was extracted.

The minimum number of hours the tube was worn in my series of 47 cases was 7, and the maximum was 548 hours, or 22 days, 10 hours; the average was 87 hours, 58½ minutes; or 3 days, 15 hours, 58½ minutes.

In the death-list we find the minimum, maximum, and average time of wearing the tube, 7 hours, 548 hours, and 94 hours, 13 minutes, respectively. Ranging from 7, 17, 28, 28½, 48½, 59, 60, 72, 86½, 120, 151¾, 197¾, to 548 hours.

In the recovery-list we find the minimum, maximum, and average time of wearing the tube, 8 hours, 317½ hours, and 93½ hours, respectively. Ranging from 8, 9¼, 17, 20, 22, 23¼, 31¼, 52, 65¼, 70, 73, 73½, 74½, 78, 96, 107, 118, 119¼, 122, 126¼, 145½, 172, 199, 231½, 246, to 317½ hours.

Blount Bleyer's post-antitoxin average is 120 hours for 79⅓ per cent. of his cases. Heubner gives 100 hours as his pre-antitoxin average time for final extubation, and 37 hours as his post-antitoxin average time for final extubation. Bokai gives 79 hours as his pre-antitoxin average time for final extubation, and 61 hours as his post-antitoxin average time for final extubation. O'Dwyer gives 80 to 83½ hours, Fisher gives 108¾ hours, and Rosenthal

gives 114½ hours as their post-antitoxin average time for final extubation.

I failed to get the records of other well-known operators.

My post-antitoxin average time of wearing tube in my fatal cases is 94 hours (3 days, 22 hours); in my recovery cases it is 93 hours only (or 3 days, 21 hours). Or, again, in the total number of cases, or 47, it is 87 hours, 28 minutes, comparing favorably with that of operators of longer experience. As each patient is, in a measure, a law unto himself, it seems unreasonable, however, to make fixed rules as to time of final extubation. Age, previous health, individual resistance, day of disease, malignancy, local conditions as to membrane, edema and spasm of the larynx, environment, etc., decidedly influence this operative procedure. For instance, some cases succumbed as early as the 7th and as late as the 548th hour, and others needed no further intubation as early as the 8th and 9½ hours, and as late as the 317½ hour. Dr. Welch, in his discussion of Dr. Rosenthal's paper, says, "Frequently the tube has to be retained as long as three weeks, even when antitoxin is used." The rule of the Germans to tracheotomize after the fifth day, or 120th hour, is discredited, and Bokai, one of their foremost intubators, now claims that even decubitus is no indication for the same. O'Dwyer's opinion in reference to this condition is so well known that no comment is necessary. In the three secondary tracheotomized cases of my series, one recovered, and two died from pneumonia and sepsis. Our American operators believe, and so do Bokai and Von Ranke, that tracheotomy will soon be completely superseded by intubation.

Personally, I think, could every case of Klebs-Loeffler croup be recognized and antitoxinized within the first forty-eight hours, even intubation would fall into disuse, or at least be reserved for the few emergency and late cases, as tracheotomy now is done. There was ocular evidence of choking of the tubes in ten of my cases. As coughing in every instance expelled the tubes, choked, or ejected the membrane before or after them, I concluded that this choking of the tube can be practically eliminated as a dangerous complication. The "thread" was withdrawn in all but two of my patients. Inversion and a draft of whisky efficaciously freed the larynx of the dangerous tube.

Casselberry records a case of laryngeal spasm in an adult ocularly demonstrated. This spasm is, to my mind, a more serious complication of croup than the above-mentioned condition, since the tube is expelled at a time when it is most needed, and when one can

hardly reach the patient quickly enough to replace it. Such spasm was a serious menace in 7 of my cases, or almost 19 per cent. Is it of central or peripheral origin; a toxic neuritis affecting the recurrent laryngeal nerve; or a general toxemia spending its force upon a particularly neurotic individual? or, again, does trauma account for it in all cases? Slight trauma would cause laryngeal hyperesthesia and expulsion of the tube. The shape of the tube itself may still be at fault, notwithstanding O'Dwyer's brilliant achievement.

Ludwig Baur in 1896 did some careful investigation along this line, again establishing the well-known points of contact between the tube and the laryngeal and tracheal walls, but additionally demonstrating a sudden backward bending of the axis of the larynx upon the spinal column. The sixth and eighth tracheal cartilages are in this angle, and the comparatively straight O'Dwyer tube here produces decubitus. He lowers the bulge of his tubes and makes a bend to conform with his anatomical findings. He found that the younger the child, the greater the angle. His measurements proved a deviation of:

10°	in a	1-year-old child.
10°	"	2- " "
8°	"	3- to 4-year-old child.
6°	"	5- to 7- " "
4°	"	8- to 12- " "
2°	"	13-year-old child.

Seventy-five per cent. of children dying of diphtheria have bronchopneumonia, and from aspiration into the larynx, weak expiration, pulmonary enlargement, lack of expectoration, palatal and laryngeal paralysis, and from the pulmonic interstitial changes that Klebs has shown to be present. Furthermore, it has been proven that the toxin of diphtheria hastens the diffusion of the pneumococcus in the animal experimented upon.

Pneumonia complicated 11 of my cases; sepsis, 11; cardiac paralysis, 5; nephritis, 3; transient albuminuria, 3; arthritis, 1.

Rashes in the following 6 cases: Hemorrhagic purpura, 1; giant urticaria, 1; simple urticaria, 2; erythema, 2.

Decubitus of the larynx and antitoxin poison each complicated 1 case.

The cultures revealed Klebs-Loeffler bacillus in 56 cases; Loeffler associated in 18, pseudo-Loeffler in 1, streptococcus in 3, staphylococcus in 5, streptococcus and staphylococcus in 4, negative in 4, while in 13 no cultures were made.

TABULATION OF FORTY-SEVEN INTUBATION CASES.

No.	Date.	Name of Doctor.	Name of Patient.	Sex.	Age.		Day of Disease.	Type.	Form.	Intubation.			Culture.	No. Antitoxin Units.	Other Treatment.	Complications.	Urine.	Result.	Remarks.	
					Vrs.	Mos.				Day of Tubage.	No. times Intubated.	Hours Tubage.								
1	1896 Mar. 23	Engelmann	Dora D.	F	2	5	7	Severe Stenosis	Primary	2	3	3x Choked	17	0	9500	Stimulation Hydrazine Bichloride Stimulation Whisky	Unknown	Unknown	Death	Toxemia.
2	Apr. 25	Sloan and Thorpe	H. P.	M	4	0	3	Severe Stenosis	Secondary Tonsils	4	3	3x Choked	Unknown	Loeffler b.	4500	Stimulation Whisky	None	Normal	Recovery	
3	Sept. 1	Stoff and Sloan	M. R.	M	2	6	1½	Severe Stenosis	Secondary Tonsils	2	1½	3x Removed	73½	Loeffler b. and Staphylococcus	7000	Stimulation Whisky Strychnin	None	Normal	Recovery	
4	Oct. 15	Engelmann and Thorpe	Mike R.	M	1	11	8	Severe Stenosis	Primary	1	8	1x Removed Refused reintubation	28	Negative	4000 Refused more	Stimulation Whisky Strychnin	None	Unknown	Death	Toxemia. Exhaustion.
5	Oct. 25	Engelmann Thorpe	J. K.	M	2	3	6½	Severe Stenosis	Primary	2	6½	3x Spasm of Larynx	86½	Streptococcus 3 Cultures	7000 to c.c. anti- streptococcus serum	Stimulation Whisky Strychnin	Broncho- pneumonia	Unknown	Death	
6	Nov. 19	Engelmann	Babe S.	F	0	7	4	Severe Stenosis	Primary	1	4	1x	7	Pseudo Loeffler b. Streptococcus Staphylococcus	1600	Stimulation Whisky Strychnin	Cardiac Paralysis	Normal	Death	Thought to be grippe, not recog- nized until dyspnea appeared.
7	Nov. 21	Engelmann	Abt T.	M	4	0	6	Severe Stenosis	Secondary Tonsils	4	6	2x Ineffectual attempt	0	Loeffler b. Staphylococcus	4500	Stimulation Whisky Strychnin	None	Unknown	Death	Asphyxia during in- tubation.
8	Dec. 17	Engelmann and Thorpe	J. L.	M	2	6	4	Severe Stenosis	Primary	1	2	3x Choked Traumatic spasm	548	Loeffler b. Staphylococcus Streptococcus Bar. Lan- ceolatus	7500 to c.c. anti- streptococcus serum	Stimulation Whisky Strychnin	Syphilitic Broncho- pneumonia Laryngeal Ulcers	Albumen for 11 days	Death	Refused a necessary tracheotomy.

1897 9 Jan. 5	Engelmann and Gillespie	P. G.	M	2	0	4	Severe Stenosis	Secondary Tonsils	2	2	Choked	74%	Loeffler b.	5000	Whisky Strychnin	None	Normal	Recovery	
10 Jan. 15	Engelmann and Goodman	J. B.	F	2	0	3	Severe Stenotic	Secondary Tonsils	2	3	4x Spasm Removed once	246	Loeffler b. Staphylo- cococcus Bac. Lan- ceolatus Loeffler b. Staphylo- cococcus	7000	"	Broncho- pneumonia	Normal	Recovery	Reinfection after ten- days' interval.
11 Feb. 15	Engelmann	C. B.	M	7	0	2	Severe Stenotic	Secondary Tonsils	5	2	1x Removed	20	Loeffler b.	3000	"	None	"	Recovery	
12 Mar. 17	Slough	Lily G.	F	1	6	4	Severe Stenotic	Secondary Nares Tonsils	2	4	3x Choked Removed	23 1/2	Loeffler b. Staphylo- cococcus	8500 8 c.c. Strepto- cococcus serum	"	None	"	Recovery	
13 Mar. 19	Meyerowitz	Boy B.	M	3	6	4	Moderate	Primary	3	4	2x Removed	107	Loeffler b.	5500	"	None	"	Recovery	
14 April 2	Engelmann	L. M.	F	2	3	30 hrs.	Severe Stenotic	Primary	2	2	6x Laryngeal spasm Expelled 5x; remov- ed once	197 1/2	Loeffler b. Strepto- cococcus	6500 20 c.c. anti- strepto- cococcus serum	"	Giant urti- caria Edema of Larynx Broncho- pneumonia	Normal	Death	Tracheotomized. Sepsis.
15 May 7	Marschek	Katie P.	F	3	0	8 hrs.	Severe Septic	Primary	8	3	1x	Unknown	Loeffler b.	2000	"	None	Unknown	Recovery	
16 June 8	Meyerowitz	Elsie J.	F	2	0	10 hrs.	Severe Stenotic	Secondary Tonsils	8	2	2x Spasm	68 to 70 hrs.	Loeffler b.	3500	"	None	Unknown	Recovery	
17 July 8	Engelmann	R. F.	M	6	0	5	Severe Moribund	Secondary Tonsils	5	4	1x Choked and coughed up 1x	9 hrs. 15 min.	Loeffler b.	4000	Artificial respiration	None	Normal	Recovery	Almost dead when tube placed; astonished that not needed after the ninth hour.
18 June 11	Regent	Ben. L.	M	6	0	2	Severe Stenotic	Secondary Tonsils	2	....		Unknown	Loeffler b.	4000	Stimulation Bichlorid	Unknown	Unknown	Death	
19 July 8	DeStefano	O. T.	M	0	11	4	Mild erate	Larynx Secondary	1	....	1x	8	Staphylo- cococcus	4000	Stimulation Bichlorid	Broncho- pneumonia Rickets	Unknown	Recovery	Thought tube slipped down; tracheotomy.
20 July 14	Miller	H. M.	M	3	6	2	Mild erate	Secondary	3	....	1x	73	Loeffler b.	3500	Stimulation Bichlorid	Erythema	Unknown	Recovery	
21 July 18	Kolar	John F.	M	3	0	4	Severe Septic	Secondary	3	....	2x Removed	120	Unknown	3500	Stimulation Bichlorid	None	Unknown	Death	Should have been re- tubed.
22 July 27	Cullen	J. McC.	M	3	6	7	Severe Septic	Secondary Nares	3	....	2x Removed	28 1/2	Loeffler b.	3500	Stimulation Bichlorid	Sepsis Extension below tube	Nephritis	Death	
23 Sept. 24	Massman	Leo M.	M	8	0	2	Severe Stenotic	Primary	5	....	1x Removed	78 1/2	Loeffler b.	7000	Stimulation Bichlorid	None	None	Recovery	

Date.	Name of Doctor.	Name of Patient.	Sex.	Age.	Day of Disease.	Type.	Form. Laryngeal.	Intubation.			Culture.	No. Antitoxin Units.	Other Treatment.	Complications.	Urine.	Result.	Remarks.
								Day of Tube.	No. times Intubated.	Hours Tubage.							
1897																	
24 Sept. 29	Martin	F. C.	M	2	3	Severe Stenotic	Primary	1 2	3x Removed	17½	Loeffler b.	4000	Stimulation Bichlorid	None	None	Recovery	Cause unknown.
25 Oct. 12	Meyerowitz	Girl K.	F	0	2	Severe Stenotic	Primary	1	3x	Unknown	Loeffler b.	2600	Stimulation Bichlorid	Unknown	.....	Death	
26	Latvine	G. L.	M	2	4	Severe Stenotic	Secondary Tonsils Larynx	2 3	3x Spasm	23½	.....	.....	Strychnin O. gas	Broncho-pneumonia	.....	Recovery	Too much strychnin; and plus toxemia, leading to twitching, etc.
27 Nov. 1	Silverberg	B. S.	M	3	1	Mild	Secondary Tonsils Larynx	3	1x Coughed up	22	Staphylococcus 2 cultures	3500	Stimulation Bichlorid	None	None	Recovery	
28 Nov. 7	Gray	C. P.	M	3	0	Severe Stenotic	Secondary Tonsils Nares Uvula	3	3x Spasm Removed one	317½	Loeffler b.	7500	Stimulation Bichlorid	None	Normal	Recovery	
29 Nov. 12	McIntyre Engelmann Cook Co. Hospital	Fred. G.	M	4	0	Severe Septic	Larynx Tonsils Nares Uvula	3	1x Removed	Unknown	Loeffler b.	Unknown	Stimulation Bichlorid	Broncho-pneumonia Sepsis	Unknown	Death	Tracheotomy.
30 Nov. 23	Gilman	F. K.	M	0	2	Severe Septic	Larynx Tonsils Nares Uvula	2	1x Expressed after death	72	Loeffler b. Strepto-coccus Staphylo-coccus Loeffler b.	4000	Stimulation Bichlorid	Broncho-pneumonia Sepsis	None	Death	
31 Dec. 1	Engelmann	Mike P.	M	5	6	Severe	Larynx Tonsils Secondary	4	3x Removed	84½	Loeffler b.	6000	Stimulation Bichlorid	None	Normal	Recovery	
32 Dec. 2	Engelmann	F. T.	F	6	3	Moderate	Primary	1	2x Removed	96	Strepto-coccus 3 cultures	300	Stimulation Bichlorid	None	.....	Recovery	Measles, plus dypnea and laryngeal obstruction.

1897 33 Dec. 5	Novak	Anna R.	F	3	0	6	Severe Stenotic Septic	Secondary Uvula Nares Larynx Primary	3	6	1x Coughed up	145%	Loeffler b.	4500	Stimulation Bichlorid	None	.....	Recovery	Unrecognized until stenosis appeared.
34 Dec. 11	Wieland	Boy B.	M	1	4	4	Severe Stenotic	Larynx Primary	1	4	2x Spasm 3x	59%	Loeffler b.	4500	Unknown	Cardiac paralysis	Unknown	Death	
35 Dec. 8	Roler and Engelmann	Lily B.	F	1	6	3	Severe Stenotic	Secondary Tonsils	1	0		17	Loeffler b.	3000	Strychnin Syrup ferrid iodid	None	Unknown	Recovery	
36 Dec. 20	Engelmann	B. G.	M	2	2	4	Moderate	Secondary	2	4	2x Choked Coughed up 2x	52	Loeffler b.	5000	Stimulation Bichlorid	None	Normal	Recovery	
37 Dec. 25	Vollm	G. DeB.	M	1	10	4	Severe Stenotic	Secondary	2	4	Coughed up	65%	Staphylococcus	5000	Unknown	Toxemia	Normal	Recovery	Died three weeks later of pneumonia after complete recovery from croup.
1898 38 Jan. 22	Goodman	Anna C.	F	1	1	4	Severe Stenotic	Secondary	1	4	1x	118	Loeffler b.	4500	Strychnin and Whisky	Bronchitis	Unknown	Recovery	
39 Jan. 11	Stulck	Will K.	M	1	9	11	Severe Stenotic	Secondary Nares Tonsils Uvula	2	4	1x Removed	119%	Streptococcus Staphylococcus	7000	Unknown	Sepsis Emaciation Anemia	Unknown	Recovery	Most surprising recovery considering tender age and lateness of treatment.
40 Jan. 19	Regent	Ben. B.	M	1	7	3	Severe Septic	Primary	1	3	2x Removed	9	Staphylococcus	1000	Unknown	Unknown	.....	Death	Too late, since diphtheria had extended to bronchial tubes.
41 Feb. 3	Litvine	Leo K.	M	5	0	3	Severe Stenotic	Secondary	4	3	2x Choked Coughed up 1x	31%	Loeffler b.	3500	Stimulation Bichlorid	None	.....	Recovery	
42 Feb. 3	Miller	W. S.	M	3	3	7	Almost aphax-fated	Secondary	3	7	Coughed up	126%	Loeffler b.	4000	None	None	.....	Recovery	Great toxemia; uremia probable; tube served purpose.
43 Feb. 15	Burdick	G. F.	M	0	10	10	Severe Stenotic Septic	Secondary Nares Fauces	1	2	2x Choked Coughed up	51%	Streptococcus Staphylococcus	3000	Stimulation Strychnin Bichlorid	Sepsis Nephritis	.....	Death	
44 Feb. 16	Pirosh	Will L.	M	1	9	4	Severe Stenotic	Secondary Tonsils Larynx	1	0	2x Removed	48%	Loeffler b.	3000	Stimulation O. gas	Pneumonia	.....	Death	
45 Feb. 2	Engelmann Cook Co. Hospital	Jim H.	M	3	6	3	Severe Stenotic	Secondary	3	3	1x Removed	60	Loeffler b.	3500	Strychnin	Broncho-pneumonia Sepsis	.....	Death	
1897 46 Mar. 4	Cook Co. Hospital	M. S.	M	2	0	0	Severe Stenotic	Secondary	1	0	3x Removed	122	Negative	4500	Unknown	Urticaria	.....	Recovery	
1898 47 Feb. 2	Cook Co. Hospital	F. G.	M	5	0	3	Severe Stenotic	Secondary	0	4	2x Removed	199	Streptococcus Staphylococcus	5500	None	None	.....	Recovery	

Antistreptococcic serum was given to 4 intubated and antitoxinized patients, but as I am now convinced, not in sufficient quantities. The largest amount of antitoxin given to any one patient was 9500 units, a likewise inadequate amount; 1000 units was the least, and 3710 units the average given. All patients under my supervision received large amounts of whisky, strychnin, and bichlorid of mercury.

The following statistics as to mortality in intubations in the post-antitoxin era is instructive:

Bokai, in a series of 90 intubations, has a 50-per-cent. mortality.

Kaiser and Kaiserin Friederich Kinder Krankenhause (1895) Report shows a $35\frac{48}{100}$ -per-cent. mortality.

O'Dwyer offers a 30-per-cent. mortality.

Waxam, $34\frac{1}{2}$ -per-cent. mortality.

The collective report of the Pediatric Society gives a $25\frac{8}{100}$ -per-cent. mortality.

Booker, in 17 cases, had no mortalities, or 100 per cent. of recoveries.

Manneire had a 25-per-cent. mortality.

Stevens, a mortality of $32\frac{6}{8}$ per cent.

Rosenthal, in 18 cases, $11\frac{11}{100}$ -per-cent. mortality.

My fatality percentage of 31 per cent. for the 100 cases of croup, including the $38\frac{28}{100}$ -per-cent. death-rate for the 47 intubated cases, and the $24\frac{11}{100}$ -per-cent. rate for the 53 cases not intubated, show a fairly successful issue. Since the slums furnished the greater proportion of these patients, I am certain that better heredity, environment and care would materially lower this record. In fact, early diagnosis, and rapid and proper serum-therapy, will surpass all previous efforts and practically rob croup of its terrors.

INTRAVENOUS INJECTIONS OF NORMAL SALINE SOLUTION.*

BY HORACE TRACY HANKS, M.D., NEW YORK.

The question of how to prevent shock during and after a severe operation, and how to relieve a patient suffering from shock, after operations and accidents, are questions of vital importance to every wise physician and surgeon of to-day. More than ever before are we all willing to accept any plan of procedure which helps to save life and which can be summoned quickly and safely in these desperate conditions. I am sure that whenever we have found a method of procedure which is an improvement on any previous practice, we ought to accept its merits and advocate its adoption.

In my somewhat varied and extensive public and private work, I have fully tested, during the past three years, the advantages of special effort to *prevent* shock. I believe the danger from severe accidents and from operations is due to more than one cause. Undoubtedly loss of blood is *first*, traumatic injury of soft parts *second*, while later comes septic absorption and obstruction of the bowels and suppression of the urine. Any one of these several conditions, when present, requires prompt and wise treatment, or death quickly follows. No arguments of mine can be required to teach the danger from a great loss of blood in any operation or any accident. All surgeons insist in their teaching that the blood of the patient must be saved, and with the various methods at our command to-day the almost bloodless operation is a common operation. No less important is the necessity of operating without severe and unnecessary injury to the soft parts. Shock follows severe traumatism as surely as too great loss of blood. Of course, severe traumatism or great loss of blood are not common with the good surgeon. But where adhesions are present, or where the intestines are involved, or where a large number of glands have to be dissected away and the nerves are injured, we expect such operations will be followed by some shock.

Recognizing the importance of putting our patients in the best possible condition in order that they may endure the operation and recover in a satisfactory manner, has led me to adopt a method of preparing my patients by moderate and judicious stimulation. Those

* Read before the Woman's Hospital Society, May 17, 1898.

of my patients who are to undergo major operations are prepared in the following manner—an invariable rule which my house-surgeon is instructed to see executed in each case: Commencing six hours before the operation, I administer from one to three teaspoonfuls of good whisky in one ounce of hot water every hour until the time for operation. And two hours before operation I pass into the rectum, high above the brim, if possible, from one to two ounces of good whisky in four ounces of warm, normal saline solution, adding when it may seem wise, a little tincture of opium to this amount of fluid.

A patient thus prepared is well fitted to endure any major operation, and in my experience I have found that they recover more quickly from the ether narcosis, and return to complete consciousness, generally, in less than an hour. I have often demonstrated this practice to the entire satisfaction of the house staff and a large number of spectators in the Woman's Hospital during the past three years.

So much for an effort to prevent shock and help the patient over the operation, especially when she has an unusually rapid, feeble pulse, or is septic from whatever cause.

I am in the habit of using regular and systematic intravenous injections of the normal saline solution, at a temperature of 115° F., using from one pint to three quarts, as may seem to be demanded by the effect produced, if the patient has lost much blood. The pulse should be watched during the transfusion, and when the desired tension is restored the injection can be stopped. The same can be repeated again in four to twelve hours if occasion demands. If a chill follow, too cold fluid has been used. No anxiety need be felt, however, as a hypodermic injection of morphine with a little brandy, quickly enables the patient to resume her normal condition again.

I am in the habit of using intravenous injections of the normal salt solution for loss of blood from any cause, from severe traumatism, and for the early stage of sepsis after an operation, and for the suppression of urine, and obstruction of the bowels from paralysis. I would not omit other methods of restoring the kidneys or bowels to their proper normal condition, but I am convinced that the restoration of the heart's functions and of the pulse-tension is the most important end to gain in order to avert the danger which is imminent, when such symptoms are present.

I believe that we should use the rectum as a channel to receive the nutrient and stimulant injection as much as its capacity for absorption

will allow. This should be done with religious regularity, but it is not necessary to *depend* upon it when it is possible to resort to intravenous injection. For years I have used rectal nutritive and stimulant enemata every six hours after severe operations, when I did not dare trust the stomach to absorb nutrition. Oftentimes the kidneys have been stimulated through the rectum by the injection of an infusion of digitalis, and by the hypodermic injection of nitroglycerin, but none of these have worked so quickly and permanently, in my experience, as the intravenous injection of the saline solution.

I believe, with Dr. Kemp, that rectal irrigations with water, at 115° F., have often relieved a congestion which was present in the kidneys. I know the congestion which occasioned the suppression of the urine has often been relieved by the rectal irrigation after his method.

Just how this simple saline solution acts on the arms may not be fully understood, but it is certain that the heart responds at once to the presence of the fluid. The cardiac and arterial ganglia are stimulated, whether the fluid is stimulating or not, and we can see and know that the function of each is being performed by the flushed appearance of the capillaries under the cuticle. The additional fluid in the arteries certainly pushes on the half-stagnated capillary circulation, cleaning out what would in a short time, become semi-poisonous in itself. I can but feel that there is more virtue accomplished than simply that of having something for the heart to contract upon. The flushing out of the smallest blood-vessels by this diluted fluid is a virtue in itself. The old maxim, "still water is stagnant," may not be inappropriate in speaking of the sluggish movement of the blood in patients suffering from shock.

The normal salt solution, sometimes called the physiological salt solution, because of its close resemblance to the serum of the blood, is made by dissolving 90 grains of pure chloride of sodium (common salt) in 33½ ounces of distilled water. The common, every-day formula, which is convenient to remember, and correct enough for all practical purposes, is a common-sized teaspoonful of table-salt and one pint of pure water, the whole to be boiled for one-half hour and filtered through several thicknesses of a sterilized towel, and kept in a close bottle, well corked with cotton, and this cotton properly protected with a bit of clean gauze.

Before beginning an operation a two-quart bottle should be filled with this solution, and kept hot with hot towels or water around it.

I have found that a hot towel placed about the vessel holding the

salt solution is convenient, and by turning hot water on the towel the temperature may be kept at 115° F. easily. If the solution becomes too cold the patient will often suffer from a chill. A temperature of 115° to 118° F. serves me best. A graduated quart bottle, holding the fluid for transfusing, is, of course, the ideal vessel. This, with a suitable rubber tube, about three or four yards in length, and a shorter one, one foot in length, the two connected by means of a glass tube and a stop-cock for shutting off the flow, are required.

The instrument for insertion into the vein is an aspirating or hollow needle, two millimeters in diameter, seven or eight centimeters in length, made with a probe point for insertion into the vein, and the opposite end ground to fit the rubber tube. It is best that the distal end of the needle, the probe end, which is to enter the slit in the vein, be smaller, or about $1\frac{1}{2}$ millimeters in diameter, thus allowing the free flow of the solution toward the heart.

The opening in the needle near the end need not be so large as to weaken it. The practical surgeon will always have a sterilized two-quart fountain syringe, with proper attachments, kept in a sterilized towel in the bottom of his bag of surgical instruments, ready for use. And this inexpensive substitute is always at hand, and, with a little careful watching by one of the assistants, is equally as useful as the graduated bottle described. I never think of doing any severe or any long-continued operation without having this rubber fountain syringe within reach.

During the last few years there have been recorded many illustrations of the advantages of intravenous injections of the normal saline solution. I believe that there has been no recent improvement in the management of patients suffering from loss of blood and from shock, and other pathological conditions attended with alarmingly feeble pulse, that will at all compare with this method of intravenous injection of salt solution.

I do not advocate this practice without due thought and experience. For the last ten years I have, for myself, and for some of my professional brethren, resorted to it in desperate cases. But of late I have come to consider it so important that I always take my transfusion instrument with me to all operations. Not that I expect severe hemorrhage because of the operation, but rather because my patient may have lost much blood before I arrived, and because the operation may be unduly prolonged, and the patient may be suffer-

ing from alarming shock and unexplained feeble tension of arterial circulation.

The little transfusion-needle just described I always carry in my small pocket-case. On one occasion I was summoned from a dinner at Delmonico's to a case of hemorrhage, and my house surgeon was much astonished to find that even then I was prepared for such an emergency, and I did a transfusion and saved the life of the patient.

Since Dr. Lewis A. Stimson's article in the *Medical News* of December, 1896, I have carefully watched every case of septicemia, with the hope of resorting to Pozzi's method, which Stimson describes, which is the intravenous injection. I have successfully performed transfusion in these septic patients, and I believe the method is worthy of more careful trial by all of us.

I am thoroughly sure that many a patient requires just the little stimulant and the little increase of the volume of the circulating fluid, to bridge her over the state of depression which she may be in, and flush the minute capillaries in all portions of the body.

If we have learned anything since the stimulating theory was so widely advocated forty years ago, it is that stimulants are absolutely needful, and saving in many cases. Possibly it is quite as useless in others. Some patients need help; some help themselves.

We have learned that a proper stimulant to the feeble powers in sickness, and before a great operation, and after a great shock, have been wonderfully helpful in saving life.

Dr. Lewis Stimson reports four very interesting cases in which the intravenous injection seems to have been of immense value to him. His fourth case is a most remarkable one.

I served my hospital time in the Albany City Hospital, under the late brilliant Dr. Alden March. We had many railroad accidents then. No patients ever recovered who were injured as severely as Dr. Stimson's patient was. I believe that the intravenous injection saved his patient's life, and I believe no other treatment would have done as well.

In over twenty patients on whom I have used intravenous injections, I have had no accidents, and only three cases where the injection was followed by a chill, and all of these were quickly relieved with morphine and brandy hypodermically. Two of these were, and had been, undoubtedly septic for several weeks before coming to the hospital. I believe that the saline solution acted so decidedly as a stimulant, directly and indirectly, to the heart, that they were

able to fight the septic conditions successfully, for they both recovered.

I believe that my success in the Woman's Hospital during this past year, which has been most satisfactory, is due not alone to the fact that I have had most excellent help in Dr. Talbot, my assistant, and to Drs. Grad and Collins, my house-surgeons, but over and beyond them it has been largely due to the use of normal saline solution, in my desperate cases, and my methodical stimulation of every operative case before she comes to the operating-room.

Patients so cared for come to the operating-table without fear, with a good pulse, and with a flushed face. They take the anesthetic kindly and quickly, and recover as quickly. They have little nausea and vomiting, and are not so thirsty, restless, and complaining as my patients were formerly.

Allow me to refer to a few illustrative cases:

Case I.—Mrs. Y., 31 years old, married. Diagnosis: Ruptured tubal pregnancy. Menstruation, regular, four-weeks' interval, three or four-days' flow, no pain. Two children, ages 3 and 2. Both labors normal.

Patient skipped one period, and five days after next period was due was taken suddenly with severe, cramp-like pains in abdomen, followed by discharge of clots and shreds from vagina. Flow continued for two weeks, at the end of which time patient took to her bed. A doctor was summoned, who curetted the uterus, thinking it was a common miscarriage. This was followed by excruciating pain and a fainting spell. In bed three weeks with intense abdominal pain before coming to the hospital, flow still continuing.

Patient had sensation as if something were "filling up" in her abdomen. Nausea and vomiting at times. Had fainted several times on attempting to raise up in bed.

On admission, patient seemed exceedingly anemic; expression, anxious; tumefaction in abdomen; tenderness in region of left ovary; pulse, 130; temperature, 102° F.

Operation: Coeliotomy.

Very many large clots were found in abdomen, the source of hemorrhage was found to be a ruptured tube on left side. Left tube and ovary removed, after ligating. Two quarts of normal saline solution, temperature 115° F., were injected into the median basilic vein in left arm before the operation. Pulse improved rapidly. Recovery rapid and uneventful. Pulse, 130. Temperature, 101.5° F.

at time of operation. Pulse, 96. Temperature, 99.6° F. one hour after operation.

Case II.—Mrs. F. E. R. came to my private sanitarium, July 21, 1897. She had ridden over fifty miles in the steam-cars. She had skipped two periods, had suffered much local pain, and had frequent attacks of vertigo. I found the evidences of a large uterus, especially in the region of the right tube. Pulse, 110. Temperature, 101° F.

On opening the the abdomen I found that there was a large amount of free blood in the abdominal cavity, and that the right tube was much dilated and ruptured.

Before the operation for removing the ruptured tube was fully completed, the patient became so pale and the pulse so feeble that I at once covered the abdominal wound, after catching the ovarian artery with forceps. I then passed into the median basilic vein on right side a quart of saline solution, temperature 115° F. This revived the patient at once, and the toilet of the abdominal wound was then completed. After this the pulse and temperature never called for any anxiety, and she made a most excellent recovery.

Case III.—Two weeks ago I was called to a city in a neighboring State, to remove an abdominal tumor from a woman about 50 years of age. She was badly emaciated, and the objective and subjective symptoms all pointed to a malignant abdominal disease, attended with abdominal dropsy. Her family physician and I both thought she might possibly be made more comfortable if we removed the ascitic fluid. And it was done, but in trying to discover the origin of the malignant tumor in the abdomen I broke off so much of the carcinomatous mass that the hemorrhage was so pronounced that I felt it necessary to inject three pints of the saline fluid. She recovered from the effects of the operation and was conscious for twenty-five hours afterward. I doubt if she had lived an hour had I not performed this immediate injection.

Case IV.—Nellie F., colored, aged 30, married twelve years. Menstruation regular, three weeks, five-days' flow. Intense pain on left side at period. One child 11 years old. Labor normal and non-instrumental. Two miscarriages, seven and eight years ago, at second month.

Symptoms: Constant backache; sharp pain in both iliac regions. Profuse leucorrhœal discharge, increasing before periods. Painful micturition. Temperature ranged from normal to 100° F. Diagnosis: Purulent salpingitis. Operation: Vaginal hysterectomy.

After the operation considerable hemorrhage occurred from a vessel imperfectly held by a defective forceps. After several attempts a Jacobs' clamp was fastened so as to control bleeding. Pulse at this time, 144. Temperature, 102° F.

Two pints of normal saline solution, temperature 115° F., were thrown into the left median basilic vein. Two hours later pulse was 114.

Fours hours after operation pulse again became very weak and quite intermittent (130). Two pints more of saline solution were then injected into the other arm, and pulse soon became much better in quality.

Patient had chill after first transfusion, but it was of short duration, and the pulse and temperature one hour after the second transfusion were better than they had been for six weeks. Patient slowly improved and was sent home nearly well in eight weeks.

Case V.—Patient was operated on for large fibroid. Abdominal hysterectomy. Cervix was removed. Gauze packing, one end brought out through the vagina. The drainage that followed the operation was very free, but was not considered too profuse. About twelve hours after the operation patient's pulse began to creep up, her respiration remaining very near normal, however. At first the pulse was 120, but in a few hours creeping up to 130, at the same time becoming very thready. The patient was carefully watched for the next twelve hours. Small doses of strychnine were given, the pulse remaining the same—about 130. The drainage having diminished, and as it was thought that sepsis might be setting in, though there was no pain nor tenderness anywhere, a little of the gauze was drawn down through the vagina. In doing so a number of large clots rolled out of the vagina. The clots being in quite a considerable quantity, a diagnosis of slight hemorrhage was made. Accordingly, hot alum douches were given per vaginam, and the patient was transfused with four pints of saline solution at 110° F. into the median basilic vein.

The pulse at once diminished in frequency from 130 to about 110, at the same time becoming quite full and regular. About twenty minutes after the transfusion the patient had a violent chill. It was with great difficulty that she could speak, so violently did she shake. One-quarter grain of morph. sulph. was given hypodermically. This cut short the chill, the patient falling asleep at once.

Immediately after the hypodermic was administered the patient's

pulse and temperature were found to be 130 and 104° F. Six hours later pulse record was 110; temperature, 101° F.

Patient went on to complete recovery. No sepsis occurred.

Case VI.—Mrs. K. was brought to the hospital with a diagnosis of peritonitis. The history obtained from the patient, with the physical examination, pointed clearly to the occurrence of a ruptured ectopic gestation. The patient was very anemic, pulse feeble; temperature, 102° F. It was decided to rid the pelvis of its contents by an incision in the vagina. This was done, but an uncontrollable hemorrhage followed, and a hasty coeliotomy had to be supplemented to the vaginal incision for the control of the bleeding. On leaving the operating-room the patient was moribund.

Her median basilic vein was opened at once and three pints of saline solution were transfused. Slight improvement followed in the pulse; but the improvement was but transient. The basilic vein in her other arm was next opened and two more pints of saline solution were transfused. The improvement this time was very decided. Though the patient suffered later from profound sepsis, she recovered fully, and is well to-day, one year since her operation. The quantity of saline solution introduced during the first transfusion was not sufficient. The improvement only followed when a larger quantity of the solution was added to her volume of blood.

Case VII.—Mrs. M., twenty-seven years old, married, no children. Patient troubled for several years with pain on right side in region of appendix; worse for past eight months. Temperature has varied during this time, usually from 100° to 102° F., in the afternoon. Constantly under care of a physician. Occasional attacks of intense pain in region of appendix. Frequent painful micturition. Decided loss of weight. Abdominal muscles tense. Dulness over region of appendix and right ovary. Patient profoundly septic. Had passed pus from rectum, undoubtedly originating in an abscess near the appendix.

Operation: Vaginal puncture.

An opening was made with scissors through posterior vaginal fornix, passing scissors far up toward appendix. This was enlarged by using Walthen's divulsors. In doing the latter a small artery was wounded; a spurt of blood followed. Considerable pus was discharged, however. The hemorrhage so completely obscured the field that it was very difficult to catch the bleeding vessel. Two quarts of salt solution were used, with immediate improvement, after

which wound was packed again with gauze. Patient finally recovered.

Case VIII.—Mrs. K., aged 33. Admitted to hospital May 27, 1898. Married seventeen years. Menstruated at first at 16. Two children, aged 12 and 14. Cured by family physician eleven weeks ago for sterility (?). Just after this operation patient noticed increased size of abdomen. She suffered great pain, and had flatulence and indigestion. Operation after usual stimulating preparation. Large ovarian abscess and pus-tube on left side and suppurating ovarian cyst, containing two quarts of pus, on right side. Copious irrigation with peroxide of hydrogen and saline solution in each pus cavity after emptying. Uterus removed. Ligatures of catgut, and abdomen closed in the usual manner. Good recovery from ether; comparatively little pain. Twenty-four hours after the operation: temperature, 103.6° F.; pulse, 158–160; respiration, 30. Pulse alarmingly weak. Two quarts of saline solution, temperature 115° F., were injected into the median basilic vein of the right arm, and sulphate strychnin, $\frac{1}{8}$ gr. every three hours, ordered; also, beef juice and saline solution with whisky, per rectum. Pulse, temperature, and respiration improved steadily after this treatment. At present, five days after operation, patient taking nourishment well. Temperature, 100° F.; pulse, 120; respiration, 22.

In conclusion, let me urge the importance of:

1. Proper preparation before an exhausting operation, by systematic stimulation or by intravenous injection.
2. Intravenous injections of two quarts or more of normal saline solution after dangerous hemorrhage.
3. Intravenous injection for bad shock, using full three pints or more of normal saline solution.
4. Intravenous injection for remarkably feeble pulse after, or even before, operation. (Use from one to three pints.)
5. Intravenous injection for septicemia; especially when an operation is decided upon. Use from one to two pints and repeat if bad symptoms return.

Let me also urge all surgeons to teach their assistants how to insert the transfusion instruments, and to properly close the wound when the operation is completed.

I am sure that no minor operation will ever bring better results than the operation of intravenous injection in such cases as I have suggested.

July 15. Patient recovered with no other disturbing symptoms.

MENORRHAGIA AND METORRHAGIA AS SYMPTOMS.*

BY W. L. DUNNING, M.D., NEWBURGH, N. Y.

By menorrhagia we mean excessive menstrual flow, and metorrhagia implies uterine hemorrhage, irrespective of the menstrual epoch. The quantity of blood lost during a normal menstruation is variously estimated by different authorities to range from three to ten ounces, and the duration from three to seven days. What would be considered normal in some would be considered abnormal in others. Probably a fair estimate might be placed at from three to five days for the duration, and from four to six ounces for the quantity. In young unmarried women profuse menstruation is not uncommon and may often be regarded as functional. Excessive eating and drinking, sedentary habits, nervous excitement, lack of out-door exercise, etc., may be the causes. Disturbances of the blood-making organs, as anemia; disturbance of nutrition, as in scorbutus, hemophilia, etc. Conditions that favor passive congestion throughout the body, as in heart and renal disease, cirrhosis of the liver, etc.

Among the local causes may be mentioned conditions that favor congestion of the uterus: as,

First, inflammatory condition of the uterus or appendages—metritis, endometritis, salpingitis, oophoritis, peritonitis.

Second, obstruction to the venous flow, as in displacements of the uterus, retroversions, and flexions, especially if bound down by adhesions; prolapsus; subinvolution following labor at term, abortions, lacerations, etc.

Third, diseases of the endometrium, granular or fungous endometritis, exfoliative endometritis, polypi, adenoma, retained products of conception, hyperemia of the endometrium incident to the presence of growths, or inflammation either of the uterus or appendages.

Fourth, fibromyomata, especially the submucous and the interstitial forms. They largely increase the blood-supply and mechanically obstruct the venous return, and keep up a hyperemic and irritable condition of the endometrium. The nearer the tumor to

* Read at the Annual Meeting of the Newark City Hospital Alumni Society, held in New York City, May 30, 1898.

the mucous membrane the earlier and more profuse the hemorrhage. Beginning as a profuse menstruation may become continuous.

Fifth, malignant disease, when carcinoma of the body of the uterus; hemorrhage for a long time may be the only symptom.

Sixth, placenta-*previa* should be thought of when the patient is pregnant.

Seventh, abortion, threatened abortion, and attempted abortion must be borne in mind as possible causes of uterine hemorrhage. Married women as well as single ones may attempt abortion upon themselves, and in their effort to conceal it may deny the existence of pregnancy.

Eighth, extra-uterine pregnancy, especially after rupture of the tube down between the folds of the broad ligament; hemorrhage may be continuous, making its exit through the uterus. The patients are usually supposed to be suffering from a miscarriage.

In inflammatory diseases of the uterus and appendages, causing menorrhagia, pain is apt to be a prominent symptom, and is generally sharp or acute, or dull and subacute, according to whether the inflammation is acute or chronic.

In displacements of the uterus there is usually a dull ache, or bearing-down feeling, or a dull pain in the lower part of the back or sacrum.

Diseases of the endometrium giving rise to menorrhagia and metrorrhagia are adenoma, granular or fungous endometritis, polypi, exfoliative endometritis, etc. In this class of cases hemorrhage may appear during the menstrual intervals, after exercise, coitus, etc., may be only a spotting or very profuse. The same applies also to cancer.

Carcinoma beginning in the body of the uterus may, for a long time have no other symptom but hemorrhage. The same applies also but to a less extent to sarcoma and epithelioma. Even in the latter hemorrhage is the first and most important symptom. This is important if we hope to recognize this disease in its incipiency when surgical means offer relief. The frequency with which cancer of the uterus finds its way to the hands of the specialist when it is too late for operation is deplorable indeed.

Metrorrhagia may be due to polypi, granular endometritis, fibroids, or cancer, and always demands investigation. A normal menopause is usually one in which the quantity grows less and less in amount, and the frequency less and less often, and finally disappears. Excessive flowing, irregular hemorrhages, "spotting," or

slight show during menstrual intervals should excite suspicion, and investigation be made. Between the ages of 40 and 60, when cancer is most likely, menorrhagia and metrorrhagia are less frequently met with unless due to some pathological condition, and, therefore, demand investigation. So long as physicians wait for dirty, straw-colored discharges, fetid odor, putrefying masses of tissue before suspecting cancer, just so long will it remain undiscovered until it has become inoperable. Better a hundred useless examinations be made than that one case of cancer be overlooked. Probably one-half the cases sent to the specialist for operation are beyond operative interference.

The importance of recognizing the presence of pregnancy in attempted abortion or threatened abortion is apparent. Those who attempt abortion upon themselves are apt to conceal the fact, and to deny the presence of pregnancy. If pregnancy is unsuspected, hemostatics as ergot or tamponing the vagina would be disastrous to the fetus. The following case may be of interest: I was recently called to Mrs. M., aged 25, married, mother of two children. Said that her "courses" had come on and that she was flowing freely and wanted something to stop it. Denied the presence of pregnancy at first, but after examination she was told that she was three-months' pregnant. She then admitted that after trying different drugs without the desired effect, she had inserted a pointed piece of wood into the uterus and left it forty-eight hours. When hemorrhage became alarming she sent for me. The os was widely dilated and the patient septic. After a consultation it was deemed best to clear out the uterus, which was done. The sepsis disappeared in a few days and the patient recovered. Any other treatment would probably have sacrificed both lives.

During the past three years I have met with four cases of extra-uterine pregnancy. In every case the patient applied for the relief of constant hemorrhage from the uterus, examination showed the presence of a mass either in one broad ligament or in Douglas' pouch. Operation in each case confirmed the diagnosis. About two years ago I was asked by a prominent physician to see an "obscure case." The history showed that the patient had been flowing continuously four weeks, though she had been regular before. She had a mass in left broad ligament the size of a mandarin orange. I stated that without examination I would venture a diagnosis of extra-uterine pregnancy. Operation revealed what was called a hematoma, but upon examination of the tube, I pointed out that it had ruptured and was evidently

the source of the hemorrhage; that the embryo was probably contained in the blood-clot, and asked to have the tube examined under the microscope. The clot was washed away, and I don't know whether the tube was examined under the microscope or not. While in the case of hematomata was barely possible, such cases at the present time are almost upon a par with ruptured tubal pregnancy, and microscopic examination will generally confirm the diagnosis. In this short paper I have endeavored to point out the more important causes of menorrhagia and metrorrhagia. As to diagnosis, different symptoms suggest different pathological conditions, but one may often be misled by symptoms and the diagnosis should never be considered complete until confirmed by a careful and painstaking physical examination. In the case of virgins physical examination is rarely called for; when necessary it may be conducted under ether anesthesia. In many cases of menorrhagia and metrorrhagia the cause is apparent. In doubtful and obscure cases one especially should call for pelvic examination. The diagnosis is made by the sense of touch. The speculum is useless. One who cannot make a diagnosis without the speculum cannot make one with it. Even in diseases of the cervix, as lacerations, carcinoma, polypi, etc., the information to be gained is more from the sense of touch than from the sense of sight.

Treatment.

As menorrhagia and metrorrhagia are but symptoms of some pathological condition, hence it is illogical to institute treatment until the underlying cause is determined. In the case of menorrhagia in virgins, tonic and hygienic measures suffice as a rule. If metrorrhagia is present it calls for investigation.

First, inflammatory diseases of the uterus and appendages are in most cases septic or suppurative, and, therefore, as a rule, the treatment is surgical.

Second, displacements of the uterus must be corrected before the hemorrhage can be controlled, which means either a pessary skillfully applied or a surgical operation.

Third, in the various diseases of the endometrium, as fungous degeneration, polypi, adenoma, retained products of conception, etc, a curettage is indicated. The dangers of this procedure from sepsis, perforating the uterus, etc., are such that it can be done thoroughly and safely only by those properly trained in surgical work.

Fourth, fibrous tumors, when symptoms are annoying, may usually be enucleated without sacrificing the uterus. This applies especially to those of small and medium size, curetting as a palliative measure.

Fifth, malignant disease is preeminently a surgical disease, hysterectomy, provided the disease is limited to the uterus or can be completely removed is the only rational treatment, any other would be little short of malpractice.

Sixth, as a rule cases of abortion require curettage to secure the patient against hemorrhage and sepsis. In threatened abortion, naturally we would endeavor to preserve the life of the fetus, unless the patient was septic, when, after a consultation operation may be deemed necessary—a curetting.

Seventh, extra-uterine pregnancy calls for surgical operation as soon as discovered. It does not necessarily mean the sacrifice of the uterus. It may often be removed through the vagina. Vaginal incision and drainage often suffice.

In case of alarming hemorrhage from the uterus from whatever cause, packing the uterus with sterilized gauze will control it perfectly, but must be done after all the precautions against sepsis used in any surgical operation. The gauze may be removed in twenty-four hours.

SOME PRACTICAL REMARKS ON THE OBSTETRIC
FORCEPS: A DESCRIPTION OF A MODIFIED
SIMPSON FORCEPS AND ALSO A
TRACTION INSTRUMENT.*

BY D. BENJAMIN, M.D., CAMDEN, N. J.

Obstetrician and Gynæcologist to Cooper Hospital, Etc., Etc.

Gentlemen of the Philadelphia Obstetrical Society: I appreciate very highly the honor of addressing you, and I should feel very sorry if I should waste your valuable time.

It might be asked, what could be said of the obstetrical forceps that has not been said? But since I have the pleasure of addressing gentlemen who are men of practical experience and ability, I have the privilege of avoiding the elementary discussions.

For my purposes to-night, the numerous obstetric forceps may be divided into five groups:

The long,
The short,
The slightly curved,
The much curved, and
The axis traction.

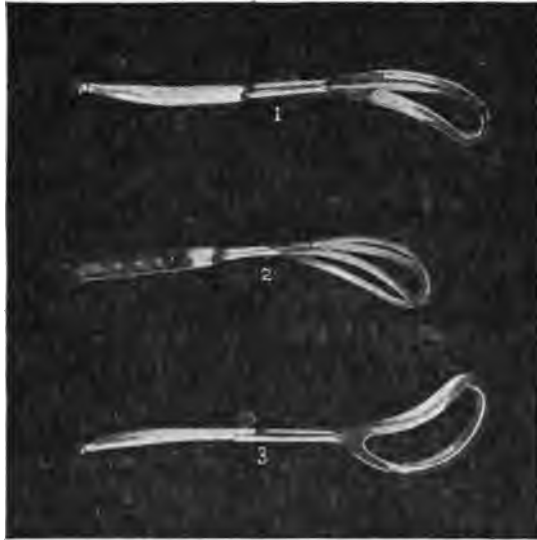
I think that any known forceps may be arranged under one of these groups. There are three forceps, however, that may be said to be the leading forceps, especially so far as Philadelphia teaching is concerned, and I presume that there is no teaching anywhere any better than that of Philadelphia.

To dispose of the long and short forceps—though volumes have been written upon their respective merits—I may say in two sentences that in treating a patient I can do anything with the long forceps that I can do with the short forceps, but I cannot do anything with the short forceps that I can do with the long forceps. Therefore, if I were to go to a case and were confined to one kind, I should surely take the long. The advantages of the long forceps have been frequently discussed, but they consist mainly in two points: a little more leverage and the blunt hook. So much for the long and short forceps.

Now, as to the curved forceps. There are two curves: one the

* Read before the Philadelphia Obstetrical Society, June 2, 1898.

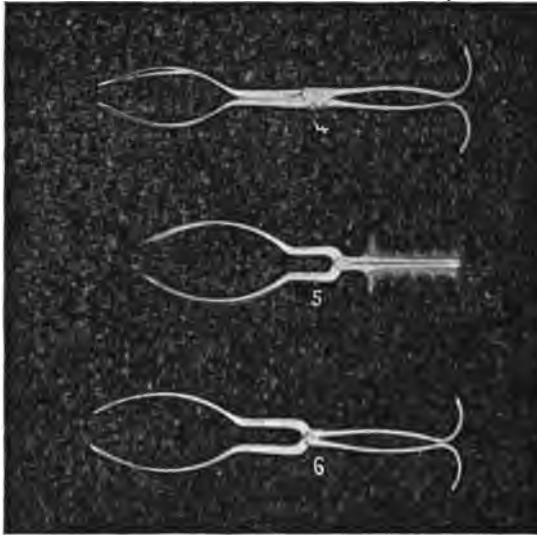
pelvic, the other the cephalic. In speaking of the curved, I have reference more particularly to the pelvic curved. Here we have a moderately curved forceps, the Simpson (Fig. 2). We have the decidedly curved in the Wallace (Fig. 3). The Bethel forceps are more curved than the Wallace. The Hodge forceps are moderately curved, or a curvature between the Simpson and the Wallace. I have now mentioned the three leading forceps. There are very few comparatively of other kinds of forceps sold; and, in speaking of the curvature, I will call your attention first to the Wallace, and what I say of these will apply to all the other curved forceps. In applying these, we



Figs. 1, 2, and 3. 1, Benjamin's. 2, Simpson's. 3, Wallace's.

may better, perhaps, reach thoroughly a head that is high up in the anterior wall over the pubic bone, but when you have done so and attempted extraction, you are pulling against the pubic bone. Therefore, with curved forceps, axis traction becomes very important. The large fenestra in the portion of the Wallace near the handle enlarges the vagina and presses the points well forward. If these forceps slip, which they are liable to do, you immediately have the cutting of the anterior tissues, the bladder, and the tissues of the neighborhood.* The aptitude of these forceps to slip is due to the cephalic curve, and what I say of them applies to all forceps which

have that particular curve. The Hodge and Wallace, you see (Fig, 4), have exactly the same cephalic curve. These forceps will slip, and the reason that they slip is mainly that when they are sufficiently open to take a child's head the blades are almost parallel. By great pressure you can make them hold better, but you can see they are capable of dangerous compression because they come so close together. If you will compare [see Figs. 5 and 6] the Simpson curve with the curve of this class of forceps (Fig. 4), you will see there is little likelihood of endangering the child's head with the Simpson forceps or with the Benjamin forceps; the points do not come so close together,



Figs. 4, 5, and 6. 4, Hodge and Wallace. 5, Simpson's. 6, Benjamin's.

nor do the blades. The Hodge and the Wallace (Figs. 4 and 3), and that class of forceps, therefore, endanger the child and the mother—danger by compression in the case of the child, and by slipping in the case of the mother. The advantage, however, which the Wallace and Hodge, and that class of forceps, have is in the long handle and the hook, but the curves—the pelvic and cephalic curves—are not so good as the Simpson. That excellent teacher, Professor R. A. F. Penrose, I remember once remarked, that if you should throw the Simpson forceps at the patient they would go on. He was teaching that they were so easily applied that they were safe to mother and child—

more so than others. I found that to be the truth, and I find to-day that the leading colleges and the leading teachers in Philadelphia are recommending the Simson forceps. I have asked prominent instrument-makers, who perhaps sell most of these instruments, and they tell me that they sell eight of Simpson's to one of any others to-day, so they are growing more and more in favor, and that is due to these facts: that you can pull without their slipping. They apply themselves. There is no waste space. They are accurately adjusted to the child's head. You can pull as hard as you please, and should they by carelessness slip, there is not much curve to endanger the mother. They are very extensively used, but there is no advantage in the short handles, and in some cases they cannot be applied high up. The Hodge and the Wallace, and that class with long handles, can be applied high up, and while they are nicely aseptic you have the advantage of the hook. Sometimes the key is in the way, and sometimes it makes them rigid when it is screwed up tightly, so that the Simpson lock is the better, and has just enough

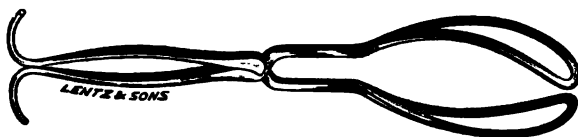


Fig. 7.

freedom in the joint to give the sensation to the hand of the child's head. The Simpson forceps handle cannot pinch the mother. These forceps will sometimes pinch at shank—these long forceps of Hodge and Wallace—but they can be used high up and you have the advantage of this handle.

After carrying both kinds for a while it occurred to me that I might have all the advantages of the Hodge handle combined with the Simpson blades, which are the correct and best curvatures. I, therefore, devised these forceps (Figs. 1, 6, 7, and 11), which you see are simply a modified Simpson, with exactly the same cephalic and pelvic curve, but they are longer in the shank. They have no obstructions; they have the Simpson lock and the Hodge handles. As an apt illustration of the importance of this change, I may mention an occurrence I had a few weeks ago. I was sent for to go to a town in a neighboring State, some fifty or sixty miles distant, to perform a Cæsarian section, and "come prepared." Among the instruments I threw into my satchel was this modified Simpson. When I

got there I found that the child's head had presented and that the physicians—experienced men, one of them of thirty-years' practice, good obstetricians—had pulled the head off. I had not before met with a case where the body would not follow the head. They had pulled off the head of a large, strong child. Then, getting one arm down, they had pulled that off. The child then receded and they could go no further. The woman was in a very bad condition and could not have stood a Cæsarian section. Subsequent events proved that she would not. While preparing for Cæsarian section as a forlorn hope, and while I intended to do it if necessary, I tried to see what I could do in the way of delivering and succeeded in finding the sound shoulder. The woman had been torn and the rectum was lying in the posterior portion of the vagina. The woman was septic and you could smell the odor upon going into the

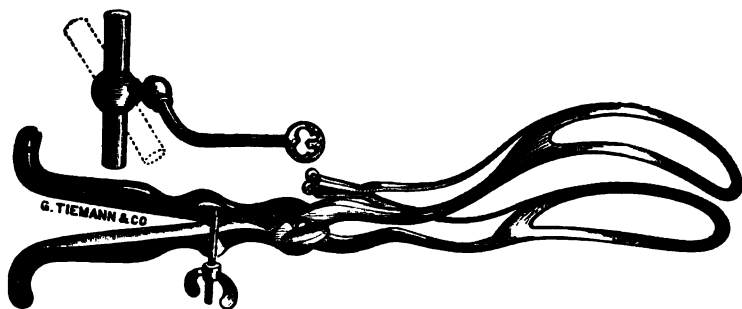


Fig. 8.

room, and she was sinking. With difficulty I found the sound shoulder, and if I had had the Simpson forceps they would have been no use whatever—the child could not be turned without great danger to the mother, if at all, two physicians having tried in vain for hours—but having the *modified* Simpson, I simply hooked the blunt hook over the shoulder and delivered the child, which could not have been done with the unmodified Simpson. I, therefore, claim that this modification of Simpson is not only an improvement, but claim that it is decidedly *the best all-round forceps in use*.

With curved forceps we use axis traction and there have been various devices for that purpose. Among them we have the Tarnier, expensive and complicated, heavy instruments. These forceps owe their action direct to the fact that the handle is bent down, because when the handle is bent down the line of traction is from the

point where the traction is applied in the axis of the curved ends of the blades. Therefore, we can have axis traction, but in pulling upon this bent handle we put great strain upon these narrow rods which go to the blades, and the traction upon them is downward as well as forward, and could equally well have been applied through the strong handles, as they are attached to the blades.

The Jewett forceps are also complicated and have holes for the traction-rods. The rods pull in the same line as the handles, so that they owe their traction properties to the bending down of the handles.

An instrument was invented in England by Galabin that has the handle of the forceps bent downward at right angles, and Professor Hermann, Obstetrician to the London Hospital, and President of the



Fig. 9.—Galabin's Axis-Traction Forceps.

London Obstetrical Society, says emphatically that he cannot see any reason why they are not generally used except that they take up more room in the bag.*

There is one forceps that have a hinge by which the handle can be bent down and fixed at a right angle. I have not examined them. It occurred to me that if we could have an instrument that would give us axis traction neatly and easily at any time during the process of delivery, it would be convenient. I, therefore devised the instrument which I now show you. It can be applied easily,



Fig. 10.

at any time during the process of labor, to any of the ordinary kinds of forceps. You simply slip it onto the handles and you have axis traction. You have the axis traction with firmness and accuracy applied through the solid handles. You can remove it at any time. You can let go of the handles if you choose, because the friction in

* Hermann, "Difficult Labor," p. 371.

these parallel rods prevents the forceps handles from opening easily, and you may apply it as long as you please, and, you see, since the

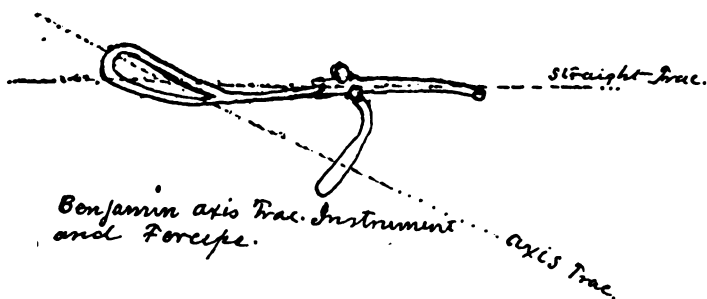


Fig. 11.

line of pull is in the axis of the bent portion of the blade or pelvis, it must necessarily, as a mathematical problem, be perfect axis traction. The instrument can be removed whenever you please, with-

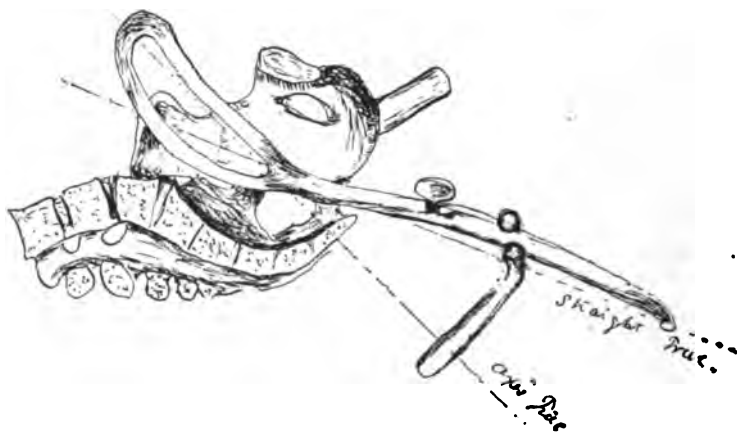


Fig. 12.—This drawing by D. Benjamin shows that when the forceps are applied at or above the superior strait the handle will be depressed so near the sacrum that no rods, unless bent at right angle to the handles, can make *axis* traction.

out removing the forceps. Of course, if you have these complicated forceps like Tarnier's, or the kind I have, with the tapes, they are not so convenient or neat. You can apply this instrument to any forceps, even to the short Simpson, and Fig. 12 shows how far back, even through the sacrum, you can carry your line of traction.

The first case upon which I tried the traction-rod was a very fat

and difficult subject. The forceps were applied high up, but I had no difficulty whatever.



Fig. 13.

I, therefore, call your attention to these two instruments and hope that they will add something to our convenience and to the comfort and success of our practice.

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EDITORIAL.

A WAR LESSON.

"He who runs may read" the lesson which, of all others, the Spanish-American war has brought most nearly home to us as a profession. Upon members and representatives of our profession in the army, which has just brought this war to a glorious end, has rested a greater and more personal responsibility even than that of the commanding officers, whose inferiors in authority the surgeons are. For the purpose of commanding officers is *to spend* men, economically it is true but most efficiently, for the destruction of the enemy; the surgeon's task is to protect the health and lives of the soldiers from all dangers save that of bullets. Not only morally but by the articles of war, *this* is the surgeon's duty—a duty in consideration of whose importance he is given a higher grade than that of any other departmental officer of equal rank, with correspondingly high pay. Yet we are now learning that the death bullets of the Spaniards were billets of mercy compared to the horrors of our transport ships; that the lonely death agony on the battle-field of Santiago would have been a welcome relief to many from the starvation and the filth- and fever-infected camps in the heart of our own country.

Will the fathers and mothers and wives of dead soldiers who never saw the enemy—stalwart men who have been sacrificed to the neglect of the simplest sanitary precautions—will these relatives hold to accountability the commanding officers of the camps—the major-generals and the brigadier-generals? No! It is the surgeons

whom the people will hold to account because, had the surgeons performed their work efficiently, there could have been no epidemics.

The surgeons in the army have not done their duty and the causes are three: *Incompetence, indifference* and *servility*.

Incompetence.—It is a notorious fact that many medical appointments have been purely political; not merely to gratify political influence but undertaken as "political jobs." "Roses do not grow on thistles," nor do we expect bad trees to put forth good fruit. A politician holds office for what he can make out of it not for what he can put into it. Therefore, it is not surprising that with incompetence we should find *indifference*. The incompetent sees no necessity for work of supererogation, *i. e.*, to do anything beyond the task actually laid out and commanded by his superiors. Yet the surgeon who, in an emergency, will consider whether any work for the betterment of the men in his charge is supererogatory is *incompetent* and, from an ethical standpoint, criminally so. The daily life of camp and field, in war-time, is a constant emergency. The commanding officer, secure in the vigilance of his outposts, takes his nightly rest; but there are no pickets to protect the sleep of the surgeon. Day and night he must work unceasingly. He must work with his hand for individuals; he must plan with his head for the maintenance of the health and well-being of all. Nor is this enough if he would do his duty. He must not wait for his superiors to point out to him methods of maintaining health and avoiding epidemics. He must take the initiative himself, so far as his invested authority will permit and, where this ceases and the urgency is great, he must not only suggest but insistently urge his needs upon the indifference, preoccupation or skepticism of both his commanding officer and his medical superior even to the point of snubbing and beyond, until he obtains what is necessary. It is not enough that he shall recommend and then leave the responsibility in the hands of his superior; the latter's possible incompetence or indifference does not prevent an epidemic nor avert the slaughter of men by disease. Nowhere are indifference and selfishness regarding the responsibilities of others so universal as in army life; the military spirit of absolute obedience to authority and precise division of labor engender them. This military spirit is necessary, if you will, and pregnant with great results, but the engendered qualities to which we refer supplied the causes in this war for the ravages of disease which are so great as to throw the destruction by Mauser bullets almost into insignificance.

Servility.—A medical officer in camp is subject not only to his medical superiors but also to the officer commanding the regiment, brigade or division to which he belongs. Although he may know that the lives of hundreds of men depend upon a certain measure being carried out, he must humbly obtain the permission of at least two officials superior in rank to himself, and one of these a layman, before he can act. No man not behind the scenes can conceive the indifference and frequently even contempt with which the army surgeon who insists upon doing his full duty is treated not only by those other departmental officers, so far as they dare, such as the quartermasters, of equal rank with himself but by his superior officers from whom both justice and the law give him the right to expect support. It is not too much to say that it is rarely that a medical officer can remain upon friendly terms with his commanding officer and the fellow members of his staff, if he insist upon doing his whole duty either in camp or in the field.

Let us take a single instance of what may have happened—though we shall probably never know how often it has happened—to illustrate the anomalous system which governs the position of a military surgeon in the performance of his duty: The Surgeon-General of the United States, Brigadier-General Sternberg, cannot give an order to his subordinate surgeons, unless that order first receive the endorsement and be forwarded by the Adjutant-General, technically the Secretary of War; moreover, unless it be signed also “by order of the Secretary of War,” any commanding officer can render it absolutely nugatory so far as the surgeon of his command is concerned. It is a surgeon of remarkably strong character who will quarrel with his commanding officer in order to do his duty by that officer’s men. Nor is this onerous task made easier by the knowledge that the head of his department is himself subject to the direct superiors of the officer in question.

In fine, military surgeons, from the highest to the lowest, are placed in positions of the gravest responsibility and yet are deprived of the power to command; they are expected to carry out necessary plans and yet are altogether dependent upon the good-will or perhaps whim of officers frequently inferior in grade and totally ignorant of the surgeon’s needs, for the simplest mechanical means wherewith to carry these out.

What, then, is the message this war carries to us? What lesson is ours to learn? It is that in the army as in civil life we are a dis-united body of men incapable, owing to our want of union, to com-

mand either the respect or the obedience even of those inferior to us in knowledge and experience. Would the Surgeon-General of this country, our only representative in the administration of this Government, the man to whom sixty or seventy millions of American citizens look for the preservation of the health and lives of our citizen soldiers, continue to be merely an appenage of the Adjutant-General's office, if behind this man stood the influential voice of the one hundred thousand physicians in this land?

But the thought is almost laughable that the profession of this country could stand unitedly behind any one or any thing. The public have long ceased to expect to hear a medical voice anywhere—unless it be that of an individual trying to advertize his personal wares by raising his little voice along the highway.

CORRESPONDENCE.

SOME LEADING EUROPEAN GYNÆCOLOGISTS AND THEIR WORK.

BERLIN, July, 1898.

To the Editor of the American Gynæcological and Obstetrical Journal:

SIR:—My last letter described very briefly what I saw in Paris; this letter will speak of some well-known gynæcologists in Florence, Vienna, Prague, Dresden, and Berlin.

Pestalozza of Florence.—Having heard that he was doing a large amount of good work I left the beaten track and went to Florence to see him. He received me most courteously and invited me to come next morning, which was Sunday, at seven o'clock to see some operations. He has an immense clinic, being in sole charge of forty gynæcological and eighty obstetrical beds. Ten of the latter are reserved for isolating infected cases coming from outside. Among his own cases he has had no death from sepsis since several years. The first operation was abdominal hysterectomy for multiple fibroids in a woman who had also prolapse of the vagina; he left a small portion of the cervix to which he afterward stitched the upper part of both broad ligaments in order to draw up the vagina. He used isolated silk ligatures for the two ovarian and two uterine arteries, and he operated very quickly. The silk was prepared by first soaking it for twelve hours in ether to extract the fat, and then sterilizing it in steam for two hours, after which it remains indefinitely in 2 per 1000

sublimated alcohol. As it appeared to be particularly good, I took down the address of the manufacturer, Bouti, silk manufacturer, Porta Rossa, Florence. He afterward removed a cervix which had been left after hysterectomy two years before, and which had now become cancerous. Some of the old silk ligatures were found encysted and calcified. He then took me over his hospital and showed me about twenty patients convalescing from laparotomy. I would strongly advise those who intend to visit gynæcological clinics in Europe to spend a few days with this talented gentleman.

Schauta of Vienna.—During my short stay I was unfortunate in not seeing him operating, but this was amply compensated for by seeing his first assistant, Dr. Schmidt, perform a vaginal extirpation of the uterus and appendages for pyosalpinx. He opened the anterior vaginal fornix first and then the posterior, sewing the peritoneum carefully to the vaginal edge, in order to avoid hemorrhage, after which he placed just six silk ligatures on the broad ligaments, completely controlling the bleeding, of which there was almost none. By cutting off the lower half of the uterus he obtained more room for the difficult task of detaching and bringing down the densely adherent appendages. I spent another profitable morning with

Dr. Gustave Kollischer, second assistant to Professor Schauta, who is quite celebrated for his work on the bladder. He catheterized the ureters and gave me a fine view of the bladder with the catheter in the ureter, by means of his cystoscope, which is a modification of Nitzze's and Breuner's. I was so pleased with its easy working, after seeing it used on several cases, that I procured one at Leiter's, instrument-maker, Vienna. It has many advantages over examination by speculum, the principal one being that it does not require any dilatation nor external light. All you have to do is to draw off the urine, fill the bladder with clear warm water, introduce the cystoscope, and touch the button for connecting the current from a little five-cell battery, when the whole of the bladder is beautifully lighted up, and the smallest foreign body as well as the openings of the ureters can be easily seen. There is a small channel adjoining the optical apparatus, through which the elastic bougie is passed and can be guided into either ureter. He also showed me a beautiful little curette for removing granulations, and also little scissors for cutting off polypi, and forceps for seizing calculi. He told me that he had removed several wandering silk stitches from the bladder which had ulcerated into it after laparotomies and vaginal fixations.

Pawlik of Prague received me very kindly, and put me in a good

humor by mentioning many of my papers. Speaking of electricity he said he had employed Apostoli's method in a great many cases and with very good success in arresting hemorrhages, in diminishing the size of fibroids, and in expelling some of them from the uterus, but he had given it up because he could not be sure of the result in any given case. He removed a large ovarian cyst by the abdomen, using catgut for ligature, and burning instead of cutting off the tumor in order to avoid adhesions to the bowel and also to lessen risk of sepsis. He closed the abdomen with two rows of buried catgut and a third of superficial silk sutures. He prefers the abdominal route for fibroid and pus-tubes. I saw them using three-per-cent. of ichthyol in glycerine in the out-patient department. Pawlik is a great linguist, and speaks English, French, and German perfectly, besides three other languages, but what he excels in is catheterizing the ureters. He showed me the instruments which he used twenty years ago in Vienna, where he told me the proceeding was employed for the first time and by him. His skill in using the ureteral catheter is wonderful; he seemed to introduce it into the bladder and up into the ureter with one gliding movement. No dilator; no endoscope; no artificial light; not even by sight, but merely by the sense of touch. I asked him to measure the catheter, and it was found to be 32 centimeters long. In a case of pyonephrosis he first injected 200 grams of water to distend the bladder and then introduced the ureteral catheter and injected 130 centimeters of 1-3000 nitrate-of-silver solution, which he gradually increases after some days to 1-1000. Sometimes he uses sublimate solution. The patient told him when her kidney was distended and on removing the rubber pipe, the solution spurting out of the catheter. On making intermittent pressure on the kidney, the liquid could be made to spurt out in jets. He also showed me the woman from whom he had removed the whole of the cancerous bladder.

Leopold of Dresden.—As my train did not get in until 9.30 A.M., and I did not reach the hospital until ten, I was too late to see him operating, which he begins every morning at seven o'clock. He is a firm believer in total extirpation of the uterus whenever both ovaries and tubes are severely diseased. He gave me his recent paper on the results of sixty-seven such cases, with a mortality of $1\frac{1}{2}$ per cent. Also another paper giving results of 100 cases of removal of the uterus by the vagina for myoma, with a mortality of 4 per cent.

Olshausen of Berlin.—I studied under him ten years ago, and was pleased to see that he had not aged at all since then. He gave me a

kind welcome and invited me to an operation next morning at eight. When he has several operations he commences sharp at 7 A. M., so one has to rise at 5.30 or 6 A. M. to be there on time. The case was a woman of 65, who had a bleeding polypus which on removal and examination a few days before was found to be cancerous. He opened the two pouches and sewed the peritoneum to the vagina. He used nothing but catgut throughout, but he always ties three knots on the arterial ligatures. The ligaturing of the broad ligament was greatly facilitated by his having the best needle I have ever seen, known as Olshausen's "Unterbindungsnadel," and much superior to Deschamps'. As he trusted entirely to catgut I asked him how it was prepared. (1) Soaked for six hours in sublimate water 1-1000; (2) the water is removed by soaking for twenty-four hours in sublimate alcohol 2-1000; (3) matured for several months in absolute alcohol and used directly from that. After the operation he took me over his wards and showed me a great many cases convalescing nicely from laparotomy. In the latter he closes the abdominal wound with four layers of catgut in fat patients, or three in thin ones. He objects to through-and-through silkworm gut for fear that it will lead pus into the peritoneum; although another operator, Landau, told me of a woman having died on the sixteenth day owing to being closed up by layers of catgut; the pus could not get out and so broke into the peritoneum, which would have escaped to the skin if she had been sewed up with through-and-through stitches. Olshausen dresses the abdominal wound with a very little iodoform and a single little strip of gauze, over which collodion is painted so as to completely seal the wound, and this remains undisturbed for twelve days. I saw several of these first dressings removed and they looked very well; the catgut was all absorbed, and the knots could be brushed off. As I thought that the buried catgut would cease to hold the wound after a few days, I asked him if he ever saw hernias? He replied that they would happen in spite of any method of suturing. I told him that I used silkworm gut and left it in a month. He does ventrofixation by passing a silkworm-gut stitch around each round ligament near the uterus and fastening it to the abdominal fascia and leaving it buried there. I saw him introducing a pessary and sending a woman away, who was brought for operation with a freely movable retroverted uterus, which he first replaced. Next day he did abdominal section for an ovarian tumor with twisted pedicle, and another case of pus-tubes and ovaries also by the abdomen, taking great care to wall off the bowels with quantities of sterilized gauze.

No one here flushes the abdomen with water, and they have also abandoned constant irrigation in vaginal work, using instead great numbers of little gauze sponges, which are thrown away as fast as used. Olshausen did not remove the uterus but carefully closed all bleeding points and left it in. On the walls of the operating-room he has two cards: "NOLI TANGERE" and "FAVETE LINGUIS." He told me he was going to get another one with "not to expectorate" in Latin. He showed me two cases of eclampsia, of which he has about sixty a year, sometimes as many as six at a time. As is well known, he is the first authority in Germany on obstetrics and is accoucheur to the Empress.

Martin of Berlin still stands at the top of the gynæcological ladder in Germany. He operates at his private hospital every day at twelve, which is a great boon for visitors as it enables us to see two or even three other operators each day, and he did two or three a day during the whole week. The first was a vaginal hysterectomy for cancer of the cervix, using catgut for the broad ligaments. It would have been a very difficult case for any one else but was quite easy for him. The second case was vaginal fixation in a lady who had been wearing a pessary for retroversion for many years without being cured. He is the quickest operator I have ever seen, only taking ten minutes for this pretty operation. The same running catgut suture went through vagina and peritoneum and the fixation-stitch was of catgut. The third case was one of cystic ovaries, in which he opened the abdomen by the vagina, brought out the ovaries, found them diseased, removed four-fifths of them, and carefully sewed up the remainder with catgut, and put them back again. After closing the vaginal incision he did an anterior and posterior colporrhaphy on the same patient. Next day he did vaginal hysterectomy for a small fibroid, which was difficult on account of the senile atresia. I made particular inquiries whether he had ever known of a case of post-operative hemorrhage, and he replied not for several years, because they tied it tighter. Next day he did two vaginal fixations for retroversion with fixation. He was greatly aided by an instrument I have never seen before, consisting of a forceps the posterior blade of which was a stout uterine sound, and which being introduced was used as a lever to lift the uterus forward while he was opening the vesico-vaginal plica or fold. He then detached the appendages and removed them, and after carefully closing the torn surfaces on the back of the fundus, he attached the uterus at the level of the internal os to the vaginal wound. The bad results of

pregnancy following the operation in the early cases is due to fastening the top of the fungus to the vagina, the uterus thus being held upside down. In another case he brought out the appendages, emptied some cysts in the ovaries and replaced them, and then did vaginal fixation. The next day I saw him cauterizing an inoperable cancer with a very pretty electrical cautery made by Hirshman, 15 Johannis Strasse, Berlin. It consisted of a sharp porcelain tip heated by platinum wire, and was supplied with current from a small storage-battery not larger than a cubic foot. It was quite portable, and only cost \$60, including a cystoscope and a head lamp for operating on dark days.

Landau of Berlin is one of the leading teachers there. He is assisted by his brother and has a large and handsome private establishment in the Phillip Strasse, near the Charité. The pathological department is looked after by Dr. Pick, who speaks English fluently. He has a beautiful method of preparing specimens which are first hardened in four-per-cent. of formalin and then stretched on wire netting. They have the specimens of every case, both macroscopical and microscopical, from whom they have removed anything, even down to curettings and vaginal discharges, systematically indexed for ready reference. I have never seen anything like it anywhere. Dr. Pick gives a course of microscopy to physicians. I saw Landau remove large double ovarian tumors which Dr. Pick took sections from and mounted and stained while the operation was going on and showed us in a few minutes carcinoma. Landau used silk to tie the pedicles, and through-and-through silver wire for the abdomen. Another day I saw him remove pus-tubes by the vagina in a case of retroversion with fixation. He split the uterus up the middle with his scissors, and after digging out the pus-tubes he put two or three clamps on the broad ligament on each side and cut them off. I was very favorably impressed with this method in this case. But immediately afterward he did it on another patient in whom the pus-tubes were much higher up in the pelvis, and he had tremendous difficulty in getting them out by the vagina, and I felt sure that he could have done it much more easily by the abdomen.

Dührssen of Berlin seems by common consent to be acknowledged as the ablest among younger men of note. He is not much over forty, but his large private hospital at 25 Schiffbauerdamm, filled with important cases and maintained at his own expense, testify to his ability and energy. He received me most courteously, and patiently answered my very numerous questions. He showed me a patient, from

whom he had removed the uterus by the vagina for hemorrhage due to hemophilia, which interested me particularly, because three years before she had come to him for the same thing and he had employed *Sneguiroff's* steam cure which cooked the mucous membrane so well that she did not menstruate at all for three years. He kindly set it going for me. It is a little boiler fitted with a thermometer so as not to let it get hotter than 120° C., and the steam is conveyed into the uterus by means of a double catheter during a quarter to four minutes. The cervix must first be thoroughly dilated, and there must be a rubber tube over the steam pipe so as not to burn the cervix, which would cause a stricture. He is an enthusiast for vaginal laparotomy and claims to be the inventor of vaginal fixation for retroversion, he having published his first fifteen cases before any one else published one. I was very much opposed to the operation before coming here, but since I have seen Dührssen doing three in an hour, as well as several other operators doing it very quickly, and after hearing its manifest advantages I have been most favorably impressed with what I have seen of it. He opens into the peritoneal cavity in two minutes or less, draws out the ovaries, tubes, and uterus, destroys all cysts by ignipuncture, replaces them, passes a silkworm-gut ligature through vagina, peritoneum, uterus, and out again on the other side through peritoneum and vagina. This is left untied until he has sewed up the opening in the peritoneum with a running catgut and the vagina with another row of catgut, after which the fixation ligature is tied. I made many inquiries about Alexander's operation, but nobody here does it. When I told Olshausen that I could generally find the round ligament with my eyes shut he invited me to do the operation on a case, but on examination her uterus was found to be fixed, and therefore unsuitable. Next day I saw Dührssen remove the vermiform appendix and double pus-tubes by the abdomen, which he does in about twenty-five per cent. and by the vagina in seventy-five per cent. Next day he removed a pair of very angry-looking gonorrhœal pus-tubes by the vagina. There was recent peritonitis. As she was a young woman he left the uterus and one ovary. This was a very nice case, as he did it very quickly and all outside of the vagina.

Mackenrodt of Berlin is one of the coming great men, if not already one. He appears to be under 40 years of age and is a fine operator. I saw him doing a Cæsarean section and subsequent total extirpation of the uterus for cancer. The child, about 8 months, was taken out alive and did well. There was hardly any bleeding. As

soon as the child was removed through the opening in the uterus he put on two ligatures on each side and a few temporary ones on the uterus side and cut between them until he came to the uterine arteries, which he tied. He then separated the bladder and freed the uterus until he had it and the vagina, like one tube free almost to the vulva. He felt for the large cervix and cut the vagina below it, not with a knife but with a large cherry-red electric cautery, his object being to prevent it from infecting the peritoneum. The current measured 17 ampères and was obtained from the street. The asepsis of himself and assistants was most thorough, they spending twenty minutes by the clock in disinfecting their hands. He and most of the physicians here stand on the patient's left, so as to use their right hands.

Koblanok of Berlin is Olshausen's first assistant, whom I saw removing a large fibroid by the abdomen. The case was an easy one but he did it beautifully.

Gusserow, whom I was anxious to see, did not operate while I was in Berlin. Neither did Nagel, his assistant.

In closing my letter from Berlin, I must truly say that I have seen more here in one day than I have ever seen in any other city, and I cannot speak too highly of the kindness with which I was received by one and all. Nearly every day I was up before 6 A.M. in order to get to Olshausen's by seven, and from there I went to Landau's, and from there to Dührssen's or Mackenrodt's, and from there to Martin's, where I remained till nearly two, by which time I felt that I had seen enough for one day. As all these places are within a few minutes of each other, Berlin offers especial advantages for a post-graduate course. My next letter will speak of Sænger, Zweifel, and Jacobs.

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TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

Stated Meeting, June 2, 1898.

(Continued.)

Some Practical Remarks on the Obstetric Forceps: A Description of a Modified Simpson Forceps; also a Traction Instrument.

BY D. BENJAMIN, M.D.

(See page 248.)

DISCUSSION.

DR. R. C. MORRIS: The obstetric forceps is always an interesting subject, although an old one. The Doctor's remarks, practically, only offer an opportunity for exchange of ideas as to different types of instruments and their reliability. I listened with a great deal of interest to his remarks, and I was impressed, first of all, with his statement that with the long forceps he was able to accomplish all that he could accomplish with the short forceps, and that he was not able to accomplish with the short forceps all that he could with the long forceps. The only exception to that proposition which I should feel inclined to advance, is that the Doctor might not be as likely to save as many babies with the long forceps as with the short forceps, from the fact that the greater degree of compression likely to occur with the long forceps endangers the child. I think the great advantage of the Simpson forceps is that it saves more babies in a given number of operations than can be saved with the long forceps (such as the Hodge forceps) in the same number of average forceps deliveries. He also laid some emphasis on the value of the hook applied to the long handle of the instrument, which he has exhibited, as his modification of the Simpson forceps. I am agreed with the Doctor that an emergency may arise when the blunt hook will be of some value, but in my obstetric experience, which covers, in my hospital experience, 1100 cases in one institution, and a large number of deliveries in my private practice and consultation work, I have never found it necessary to use the blunt hook. The case in which Dr. Benjamin contemplated Cæsarian section, I think

in my own hands would have been promptly delivered by version. It is important to bear in mind that the Simpson forceps is not constructed for the high operation. I think the doctor who would attempt to deliver the head arrested above the pelvic brim with Simpson forceps would find the extraction difficult whether the handle was short or long, because the blades of that forceps have not sufficient pelvic curve. My own practice is to use the Simpson forceps for the low operation, but never to use it for the high operation. When we come to the subject of axis traction, we are all agreed as to the absolute value of some form of axis traction to deliver when the head is high in the pelvis. Several years ago, like everybody else, I felt a desire to provide an instrument which would be an improvement on what had been created in this line. I foolishly undertook to modify the Tarnier instrument, and had an instrument-maker modify the Tarnier instrument. This modified instrument I soon abandoned, finding that while it helped delivery, it was very destructive to the babies. Then I learned that Tarnier himself had at least a hundred models made before he came to the conclusion that his last model was the best. With the Tarnier forceps shown to-night I have no difficulty when the high-forceps operation is indicated. As to the traction-rod invented by Dr. Benjamin, I believe that a certain amount of axis-traction can be thus secured. The principle is the same as that of a traction-bar which one of the instrument-makers in the city had the kindness to send me some years ago. By a similar mechanical contrivance, a bar is attached over the shoulder of the Simpson or other forceps. I tried it in several cases, and I came to the conclusion that you did not get the same amount of axis-traction as with traction-bars attached to the blades themselves. You use rather a prying force. A fulcrum is formed, around which the head is pried and is not pulled in the direction of the axis of the birth canal. It is not to be compared in my experience with the Tarnier instrument. I believe that one who is likely to do much obstetric work should always be supplied with two instruments, the Simpson for the low operation and the Tarnier axis-traction instrument for the high operation. Never departing from this rule, we will deliver more live babies than by any other means. I regret that other topics have not been presented for discussion, such for example, as the frequency, the indications, contraindications, and results of forceps deliveries. The frequency and the results of forceps delivery are no doubt determined by the individual's skill in the application of the instru-

ment and by his aseptic or antiseptic technic. Oftentimes the forceps can be used not only for the mother's best interests, but unquestionably for the child's best interests. Studying the maternal results, it was an interesting fact for me to observe, in a series of cases in my first two years at the Preston Retreat that my forceps deliveries had better temperatures than the same number of cases taken during the same period that were delivered spontaneously. I am sorry that the Doctor did not consider other problems, but so far as his study of the instrument itself is concerned, his discussion has been exceedingly interesting and very valuable.

Dr. D. LONGAKER: I can duplicate almost in toto the experience of the last speaker in reference to the Tarnier forceps, and it is a very vital point in the discussion to-night, I think. My conclusion has been precisely the same as Dr. Norris's. I have adopted Tarnier's last model and have used it now for a number of years and would not think of using that modification which I myself had more or less completed some years ago. The last speaker did not mention the most vital point of all in the Tarnier principle; it is not the fact at all that we are making our traction somewhere approximately in the line of the axis of the pelvic strait, that I think, is a minor point, and is so recognized by all men who have studied this matter, certainly it was recognized by Tarnier. It is not the fact that traction is made approximately in a line parallel with this axis, but, that traction is applied through a movable point so that the force applied to the head leaves it perfectly free to move in the direction of least resistance. The free mobility, under the extracting force permitted to the head is the vital point. I have considerable feeling on this subject, and I do not like to see the Tarnier forceps spoken of slightly because one can do with these forceps with advantage what cannot be done in any other way. I think the almost universal experience of those who have used various forceps and in a large number of cases is, as has been summed up by the preceding speaker, the Simpson forceps for the generality of cases and the Tarnier forceps for high operations.

While discussing the matter of forceps deliveries I think it is not out of place to lay some emphasis on the point of determining just what cases are proper for forceps, just what degree of obstruction, what degree of disproportion between head and pelvic cavity should permit one to think of this method of delivery. Certainly where in a given case the head can be felt high up, and with the exertion of a considerable amount of force (under anesthesia this can be carried

out most satisfactorily) that the head can be pretty well pressed into pelvis, the anterior portion not projecting over the pubis, that case can be delivered. In this way degrees of disproportion can certainly be detected, which should impel one not to think of resorting to the forceps as a means of delivery; if the head projects well over the symphysis pubis, if it cannot be depressed and pushed down into pelvis, I doubt whether such a case is a proper one for forceps at all.

Dr. BENJAMIN: There occurred to me but two points mentioned prominently in criticism: One was that the short Simpson forceps would save more babies than long-handle forceps. In reply I would say if the Simpson forceps had a little longer handle, an inch or two, you have the power if you want it, but you have to use just enough of compression to deliver your case and you will not use any more with a longer handle than the short one, but you will use it with greater ease, and if the long handle, so universally used all over the country, and recommended by Hodge and other of our great teachers, would be dangerous with the Simpson curves, what could be said of the greater danger of the Hodge, the Wallace, and that class of forceps?

Now as to axis traction: There was one criticism made, namely, that the Tarnier permits the head to move. In answer to this I would say it would take considerable to move the instrument and the head cannot move without the instrument moves, nor will the movement of the head transmit itself to the sensations of the accoucheur through these movable handles so quickly as though the handles firmly attached, and therefore he cannot so intelligently apply his force with these complicated joints, chain movement, as he could if the sensation, with very little change, is communicated to his hand through a lighter, firmer handle. As to there being any better pulling point with these rods than with the bent handle, that falls to the ground for the reason that the whole traction is due to the bending of the handle, and if the force be transmitted through the handles, it is transmitted on a better basis than through additional rods. If these rods are bent backward to depress perineum then you simply have the effect of straight forceps, unless the handle is bent at a right-angle outside the vulva.

Dr. LONGAKER: Of course we do not think of making traction in that direction. In the Tarnier forceps the handle is the index which serves to show the position of the head, and in the directions for making extraction with that forceps we bear in mind the point insisted upon by those who introduced these forceps, to never bring

the traction rods up against the handles or shanks, but allow about 1 cm. of play between the traction-rods and the handle, the handle serving only as an index to indicate the direction in which the extracting force is to be employed.

Official transactions.

FRANK TALLEY, *Secretary.*

TRANSACTIONS OF THE WOMAN'S HOSPITAL SOCIETY.

Stated Meeting, May 17, 1898.

*The President, PAUL F. MUNDÉ, M.D., in the Chair.**Injury to the Ureter during Hysterectomy.*

Dr. BISSELL: Some of the members will probably remember the case, reported by Dr. Cleveland, of a colored woman from whom a very large fibroid was removed with considerable difficulty, on account of unusually extensive adhesions. The woman made a good recovery and in due time was permitted to leave her bed. It was then discovered that there was a constant leakage of urine from the vagina. Inspection showed an opening in the vaginal wall which was supposed to be a vesico-vaginal fistula, but this proved not to be the case. It was then suspected, and further examination proved, that one of the ureters—the left—had been severed during the operation. As it would have been impossible to find the end of severed ureter and stitch it in the bladder-wall, it was decided to remove the left kidney as the only means of stopping the constant leakage of urine which, the patient declared, caused her more annoyance than the tumor had. This was done and the patient made a good recovery.

DISCUSSION.

Dr. H. T. HANKS: In several instances I have injured the ureters while doing hysterectomy, and have transplanted successfully in one case the severed end of the bladder. In one case, however, I was unable to do this, and a fistula still exists at the point in the abdominal wound where the papillomatous ovarian pedicle was drawn up and sutured to the wound. In this case the ureter was caught in this pedicle and incised.

Dr. BISSELL: In this case even had we recognized the fact that the ureter had been severed, I do not think it would have been possible to have transplanted it at the time of operation, for it had been cut very high up.

Dr. PAUL F. MUNDÉ: I have reported two cases of nephrectomy, in one instance the kidney being removed on account of injury to the ureter during a vaginal operation for the removal of an extra-

uterine gestation-sac. A piece about three inches long of the ureter was adherent to the mass and was accidentally removed with it, although this was not discovered until a week later, when the urinary fistula was found. Catheterization of the ureters then showing that it was the right ureter which had been torn away. The right kidney was removed and the patient made a good recovery. While examining this case, I found that I succeeded in finding the opening of the ureter in the bladder quite as well with the probe guided by my finger in the vagina as I did with the aid of the cystoscope. I have often palpated the normal ureter with my finger but never before attempted to catheterize it with this as a guide. The left ureter was catheterized in order to ascertain the condition of the other kidney. This is the only case in which I have been so unfortunate as to injure the ureter while operating. It was in this case that a seven-inch appendix vermiformis presented at the vaginal wound when the incision was made, and was removed.

Dr. BROWN: Last Friday I had occasion to catheterize the right ureter of a patient. The time consumed by introducing the catheter in both ureters was about eight minutes. Having satisfied myself as to the condition of the suspected kidney, I put the patient on the back with the ureteral catheter still *in situ* and was very much impressed by finding the ureter placed at such a distance from the cervix. The ordinary fraction of an inch given in books has never conveyed an idea to my mind. In this case the examining finger being on the side of the cervix the ureters move well to the outside hardly touched by the finger laterally.

Dr. HANKS: It is well that they are situated at a distance from the cervix. Even as it is, I think it is surprising that we do not more often injure them.

Dr. MUNDÉ: As a rule the ureters will not be injured if we follow Segond's plan of pushing them as far away from the cervix as possible. I always have an assistant hold the bladder, and incidentally the ureters, up out of the way by means of a sound passed into the bladder.

An Intra-pelvic Method of Operation for Relief of Cystocele.

Dr. HANKS: I wish to speak of a method of operating for the relief of marked cystocele which may be as new to you as it is to me. I have often wondered if it would not be possible in bad cases of cystocele, with a very deep anterior pouch in front of uterus, to operate

from above. About two months ago I resolved to try this plan which I now describe. The case was an especially bad one and one which did not probably offer a fair test of the value of the operation. That the result was quite satisfactory in this aggravated case speaks well for the method. When admitted to the hospital the patient had a lacerated cervix and perineum, the uterus being very low in the pelvis, and an enormous cystocele. I first repaired the cervix. An abdominal incision was then made and the uterus drawn up into the abdominal wound. The bladder was carefully drawn forward, the anterior peritoneal covering of the uterus and the posterior peritoneal covering of the bladder scarified, and the two stitched together with a catgut suture similar to that used in the Laporte operation (No. 1 catgut was used and half a dozen sutures were employed) a full inch and a half of the pouch anterior to uterus was thus obliterated.

My object thus far was for the purpose of obliterating this deep pouch between the uterus and bladder. The fundus uteri was then fastened in the usual manner to the abdominal wall as I do in ventral suspension. Some days later an operation on the perineum was performed by Dr. Talbot. The sutures suspending the uterus were removed at the end of thirty days, the usual time for such cases. She left the hospital with the uterus in good position, the cystocele having been entirely relieved. At no time since the operation has she had any bladder symptoms. It was not a typical case by which the advantages of the operation could be demonstrated, because ventral suspension, trachelorrhaphy and perineorrhaphy were performed and served to help relieve the cystocele, and, therefore, I do not know how much of the improved condition of the patient was due to the new operation. I shall try it again on a patient upon whom no other operation is done in order to determine this question.

DISCUSSION.

Dr. DUDLEY: I can readily see how the operation could be employed with success if there were any reason for opening the abdomen other than operating to relieve the cystocele. I do not think that Dr. Hanks would advise opening the peritoneal cavity to relieve so simple a condition as cystocele.

Dr. HANKS: In the case I referred to, the abdomen was opened for the purpose of replacing the uterus which was outside of the body. I might not have opened the abdomen solely for the purpose

of operating upon the cystocele, and still, when the descending uterus follows the descent of the bladder, I am sure that the intestines in the deep anterior pouch do much to encourage the descent of both bladder and uterus. To keep both from falling is my desire and expectation in recommending this operation.

Ovarian Cyst; Fibroid Tumor of the Uterus.

Dr. DUDLEY: These two specimens are presented together because they illustrate conditions diametrically opposite. In each case the patient was a young woman. The first is an ovarian or intraligamentous cyst, the patient from whom it was removed being an invalid who had twice had plastic operations performed upon her. She was 22 years of age, matured at fifteen, menstruated regularly but the flow was profuse and lasted about ten days. She married at fifteen, had two children, now four and six years of age, and one miscarriage between the two. She was curetted several times after the birth of her last child. Two years ago she had a pelvic abscess which discharged spontaneously into the rectum, and she never fully recovered her health. Pain in the side was constant. Upon examining the patient I found that the cervix was badly torn and the uterus and appendages thoroughly diseased, and, therefore, I decided to do a vaginal hysterectomy and remove the uterus. After making the vaginal incision I encountered so many adhesions and found the cyst so bound down to the intestines that I decided to make it a combined operation and at once opened the abdomen. I put a pair of forceps upon each uterine artery, broke up the adhesions, freed the appendages and removed them with the uterus, amputating the latter above the vaginal junction and covering the stump with peritoneal flaps. The operation was done a week ago and the patient is doing well.

The second specimen is a peculiar-shaped fibroid and was removed from a single woman, 32 years of age, and gave rise to no symptoms save flooding and enlargement of the abdomen. Suprapubic amputation of the uterus was performed, the growth being brought out through the abdominal incision while the vessels were ligated. As in the previous case, the stump was treated by the intra-pelvic, but extraperitoneal, method, the cervical portion of the uterus being covered over with peritoneal flaps. Not an ounce of blood was lost and the operation was not followed by shock. The patient is making a good recovery, the wound, five inches in length, having healed without suppuration.

DISCUSSION.

Dr. JAMES N. WEST: I do not see why it was necessary to do a hysterectomy in the case of the ovarian cyst. I should not think that Dr. Dudley would allow a laceration of the cervix, however extensive, to lead him to remove the uterus, especially as the other ovary was good. He might have saved the patient her uterus and one ovary.

Dr. BROWN: As I understand it, Dr. Dudley did a combined operation in the first case. I would like to ask him why he did this—why he could not have finished the hysterectomy by the vagina, thus saving the woman the abdominal incision and consequent scar?

Dr. E. L. H. MCGINNIS: I would like to ask the members whether they have ever noticed any association between the development of fibroid tumor of the uterus and a gouty or rheumatic diathesis. This question was recently brought up at the College of Physicians and Surgeons by Dr. Tuttle and Dr. Jarman, and since then I have been surprised by the number of cases which I have seen in which the two conditions were associated. Fully seventy-five per cent. of the cases seen by me lately either gave a history of gout or rheumatism, or their parents did. I would also like to ask if it is common to see fibroids in young women. Some years ago I saw a girl of nineteen with a large uterine fibroid. The cavity of the uterus measured seven inches.

Dr. HANKS: I would like to refer to one point in connection with Dr. Dudley's cases. I do not think that we are nowadays quite as careful as we might be in determining the direction of the uterine canal, and incidentally, the density of the tumor. In many of these cases of uterine fibroid, myomectomy can be done in place of hysterectomy. Last week I saw a case in which the tumor was the size of my two fists. Upon introducing the sound to ascertain the direction of the uterine canal, I felt morally certain of the difference of the density of the tumor and the uterus—I was sure the uterus was only two and one-half inches deep, and although the whole tumor and uterus was quite large and symmetrical, I satisfied myself that the uterus could be saved. I therefore did a myomectomy quickly, easily, and safely. In cases of small fibroids, the first thing we should do is to learn the size of the uterus, where the cavity is, and the density of the tumor. In this way it will be found that in many cases a myomectomy may be done, and the function of the uterus not destroyed.

Dr. DUDLEY: I think that Dr. West must have misunderstood me. I explained my reasons for doing hysterectomy in the first case. The uterus, as well as the appendages, was thoroughly diseased. The patient had had a pelvic abscess, the seat of which was evidently the right tube, which ruptured into the rectum, and the cyst was so bound down to everything that it was extremely difficult to free it. Upon exploring the pelvis from below I encountered a mass of adhesions, many of which extended to the navel. The omentum was fast to everything, and the bladder was also involved. I also found four or five small floating cysts and removed them. Then I decided that it would be best to open the abdomen, which I did, and it took me over an hour to free and remove the cyst. I did not think it was good policy to work through the vagina under such circumstances simply to save the woman a scar on the abdomen.

The second case was perfectly simple. I have seen fibroids as large as this in women as young as twenty. I once operated upon one at the old Post-Graduate Hospital, doing a myomectomy because the tubes were not involved in the growth as is the case in this specimen. Had I done myomectomy in this case, the tubes would have been occluded when the uterine wall was closed.

Dr. WEST: I would like to say that I did not understand that there was a pus-tube on the opposite side in the case of ovarian cyst reported by Dr. Dudley. Under such circumstances, hysterectomy may have been justifiable.

Intravenous Injections of Normal Saline Solution.

BY HORACE TRACY HANKS, M.D.

(See page 233.)

DISCUSSION.

Dr. C. R. HYDE: Infusion is a duty which usually falls to the house-surgeon of the Woman's Hospital, and the members of the house-staff are all especially drilled in this minor operation.

In regard to the chill which Dr. Hanks speaks of, I noticed it in many cases I infused, but could assign no physiological reason for it. The other house-surgeon had also noticed the occurrence of the chill. A hypodermic of morphia seemed to control the chill most quickly.

As far as the tourniquet is concerned, at times it is useless. Es-

pecially when the patient is about pulseless at the wrist. I noticed that the author mentions the median basilic vein as the one usually selected for the infusion. It makes little difference whether the median basilic or median cephalic is employed, as the ultimate distribution of the fluid infused is the same.

Dr. BROWN: The paper is most interesting and I thank Dr. Hanks for the pleasure of hearing it, especially as it bears very strongly upon some points which are important—particularly in regard to the temperature of the solution. Up to about a year ago I lost all faith in saline transfusion. At that time I saw a report from the Rotunda Hospital of a series of cases in which infusion of saline solution had been employed, some ninety per cent. of the patients recovered. The conclusions drawn by the writer of this article is, that as a rule, too small a quantity of the solution is used. Instead of a pint and a half, or a quart, we should inject six to twelve pints. The temperature of the solution when put in the bag should be 120° F. Furthermore, the length of time during which the saline solution should be allowed to run into the vein is important. One ounce to the minute or fifteen minutes to the pint should be the rule. I once employed transfusion in a case of a patient whose pulse was very feeble, the usual two pints were injected and the pulse came up very well. An hour and a half later the pulse again became weak and an additional two pints were injected, followed by a permanent improvement in the quality of the pulse, showing that an insufficient quantity was injected at first. In another case—one of ruptured ectopic gestation, in which so much hemorrhage had occurred that the patient was almost dead—she was given a quart of the saline solution and in an hour was given another quart. She recovered, but she had a pneumonia which was probably due to the fact that the injections were given too rapidly. If this be done, a sanguinous congestion of the lungs will result. My experience shows that formerly, when small quantities of the saline were injected, the patient improved temporarily, but the pulse soon began to flag and in some cases the patient was dead at the end of twelve hours—simply because an insufficient quantity of the saline was employed. At least four quarts should be injected. It need not be given all at once—it can be divided. The only explanation which I can give of this secondary failure of the pulse is that after an ordinary primary infusion there is an osmotic action within the body—the vessels must bleed, so to speak, through the walls, and, until an equilibrium is established between the specific gravity of

the fluids of the tissues and that in the blood-vessels this leakage will continue to take place. The quantity and the temperature of the solution are the two important points. The former should be regulated by the condition of the pulse.

Dr. DUDLEY: Having in mind the subject of the paper, I sent for this instrument for the purpose of showing it to you. It is Dr. Kelly's apparatus for saline transfusion, and you will notice that the bottle is graded to indicate how much of the fluid and how fast it flows in. I wish to thank Dr. Hanks for bringing up this subject, for, as he says, it is a method of treatment which we have neglected in the past. The intravenous has many advantages over the subcutaneous method of transfusion. I have employed this method three times with success within the last ten weeks. The last time I used it was on a patient in my house—a case of hysterectomy—and she is now ready to go home. It undoubtedly saved her life. She had lost so much blood that she was exsanguinated. The heart was normal but she was profoundly anemic, the administration of an anesthetic being extremely dangerous. As soon as she was sufficiently under its influence, an incision was made in the median basilic vein and transfusion performed. The pulse improved wonderfully. We kept on injecting the fluid as fast as she lost blood, and there was a constant oozing from all the tissues. At least a quart of fluid was injected during the operation. I keep a pair of the Kelly apparatus in the house for immediate use, so that if one fails me I have the other to fall back upon.

Dr. BISSELL: I would like to ask how it is possible to transfuse a quart of saline solution at the proper temperature if fifteen minutes must be allowed for a pint to run into the vein. If you begin with the solution at 110° F., it will be considerably cooler than this at the end of fifteen minutes, which may, in fact, account for chill.

Dr. WEST: I can but express my appreciation of the very valuable paper which Dr. Hanks has presented. There is, however, one point upon which I would like information. He speaks of sterilizing the solution—should it not also be filtered?

Dr. MUNDÉ: I have often employed insuffusion. At Mt. Sinai Hospital we have a box in which is kept all the apparatus, ready for immediate use, so that it can be employed when needed without a moment's delay. For the past ten years I have employed this procedure whenever indicated by reason of loss of blood, nervous shock following prolonged operation or collapse from any cause, etc. The members of the house-staff have been taught to use it, and I myself

have repeatedly done the operation for the sake of practice. Six years ago in my private hospital I made use of it successfully in the case of a very nervous, hyperesthetic woman who went into profound collapse after an evacuation of the bowels following a celiotomy for adherent appendages. I have seen two cases during the past year of dangerous anemia from post-partum hemorrhage, in which I employed insuffusion with good results, undoubtedly saving the patients. The apparatus should always be kept ready for use, for when it is needed there is no time for delay.

The author has mentioned a case in which intravenous injection of milk was employed by Dr. Thomas twenty-five years ago. Some twenty years ago in a case in which dangerous hemorrhage followed curetting for carcinoma of the cervix, I infused six ounces of liquid beef peptonoids at the instigation of Dr. George B. Fowler, who was making experiments with that agent. The patient made a rapid recovery from the collapse, but finally died some months later of the disease.

In several instances I have observed the chill referred to as following infusion. I always provide for it and warn the patient that it is apt to occur. It is a sort of traumatic chill, similar to that which sometimes follows intra-uterine irrigation. It really has no significance, and there is no cause for alarm. It is easily controlled if one is prepared for it. Infusion may be practised by means of an aspirating-needle, a funnel, a rubber tube, and a pitcher. The quantity of fluid infused is important. I never use less than three pints and sometimes infuse five or six.

Dr. BROWN: In an emergency, it is possible to infuse a patient by means of a glass medicine-dropper and a piece of rubber tubing.

Dr. HANKS: I thank the members for the kindly manner in which they have discussed the paper. I mentioned the use of a fountain-syringe in insuffusion, because it can be easily packed in one's operating-bag, and any good surgeon can manage it easily. I also employ a graded bottle for the purpose, but the fountain-syringe bag will answer the purpose just as well.

In regard to Dr. West's inquiry, the saline solution should be boiled for ten minutes, and then filtered through several thickness of a sterile towel.

Official Transactions.

JAMES N. WEST, *Secretary*

ABSTRACTS.*

This Department is in Charge of the Following Staff of Sub-Editors:

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AND DR. W. T. KLEIN.

PÆDIATRICS.

UNITED STATES.

Nasolaryngeal Intubation.

J. S. DE JARNETTE (*Virginia Med. Semi-Monthly*, May 27, 1898) suggests as a substitute for the O'Dwyer method of intubation the passage of a soft rubber tube, or catheter with the end cut off, through the nose into the trachea; the tube is smeared with vaselin, passed down to the nasopharynx, and held there until inspiration, when a quick push forces it into the larynx; if not, the index-finger may be passed into the mouth, raise the epiglottis, and guide the tube into the larynx; the lower end of the tube should pass the epiglottis by about two inches in adults and somewhat less in children; the other end should be secured by a thread about the ear or neck. The advantages claimed are that the tube is cheap and easily obtainable; nourishment can be easily given by passing the œsophageal end through the mouth or other nostril; the tube is readily cleaned by passing a feather through it, or it can be blown through; time is gained for an operation if necessary; we can learn whether the stenosis has reached the bronchi; the measure is readily consented to by parents; and over tracheotomy it possesses the advantage that the air is warmed before entering the lungs. The writer's only trial of this method, however, was in a man with œdema of the glottis; the laryngeal stenosis was immediately and entirely relieved, though the patient subsequently died of pneumonia.

Congenital Dislocations of the Hip-joint.

J. KURTZ (*Southern California Med. Pract.*, June, 1898) says that the cause of this somewhat rare condition is now generally admitted to be arrested development of the various parts of the joint; even at birth the acetabulum is narrow and shallow, and the head of the femur is too big for it; the muscles about the joint are short and poorly developed; the acetabulum does not grow, and the weight of the body causes the head of the femur to leave its place and move, usually upward and backward, upon the ilium. In unilateral cases the pelvis becomes asymmetrical; in bilateral cases, contracted above and expanded below. In the former, the most prominent symptoms are limping and shortening of the affected

* All Abstracts are made *directly* from original articles in the language in which they were first published.—EDITOR.

limb, while the head of the femur may be felt in its new position and the trochanter is above Nelaton's line; the mobility of the limb may be increased, the pelvis is flexed and tilted, causing scoliosis and lordosis, and there is atrophy of the thigh and gluteal region. The bilateral deformity gives short legs and a large body, with lordosis and a waddling gait. Rachitic lordosis gives a similar gait, but the head of the femur is immovable, and it and the trochanter are normally placed. In traumatic luxations we have the history and immobility rather than mobility. In paralytic dislocations the head may be easily reduced into the normal acetabulum, which is impossible in the present case; moreover, the paralysis would show its results throughout the leg. The deformity cannot be corrected in older children nor in adults, but in children under 10 the results of operations have been satisfactory. The operator condemns treatment by any form of apparatus; of operations, he prefers Hoffa's. He places the limb in such positions successively that the muscles surrounding the joint are put on the stretch, and divides them subcutaneously; those from the anterior superior spine and the fascia lata he divides in an open wound. The joint is then opened, the capsule dissected off, and the ligamentum teres extirpated. The acetabulum is then widened and deepened; fat, cartilage, and spongy bone being scraped out by a Volkmann spoon, and the head of the bone replaced. If the head shows an inclination to leave the cavity anteriorly it may be necessary to retain it by inward rotation. The patients get up in from four to six weeks, but wear an apparatus for a year. The younger the child the more successful the operation will be; in children over 10 the head of the femur must be resected and a new joint formed upon the dorsum ilii.

The Hygiene of Ophthalmia Neonatorum.

F. DOWLING (*Cincinnati Lancet-Clinic*, June 11, 1898) says that while in some cases of ophthalmia neonatorum it has been impossible to demonstrate the gonococcus, there is no doubt that infection of the eye with the organism will always give rise to the disease. Opinions differ as to whether infection takes place during the act of birth or later; it seems unlikely, however, in normal labors, for in such the child's eyes are closed while the head is in the canal; in instrumental or slow labors this may not be true, and the larger heads and consequent more difficult labors may explain the greater liability of male children to the disease. Certainly some cases have been born with ophthalmia. Whether the case is infected at birth, or later, is shown by the length of time before the disease shows itself. There are many sources of later infection; the lids may be covered with vaginal secretion; the child's body and eyes are often washed with the same water and sponge, and in many other ways the carelessness of nurse or mother may be responsible. Poverty and overcrowding favor the disease; so also, apparently, exposure to intense light, currents of air, cold, etc.; it has also been observed to be much more prevalent during epidemics of child-bed fever. There is no better prophylactic than the old two-per-cent. solution of silver nitrate; but the child's body should first be thoroughly washed and then the eyes cleansed with fresh water and a fresh piece of linen. Treatment of the disease requires a competent and cleanly nurse. The first directions are to cleanse the eyes thoroughly, every hour during the day and every two hours at night, with a ten-per-cent. solution of boric acid; during the first week the everted lids, after

thorough cleansing, are touched twice daily with a saturated solution of boric acid; after the discharge becomes profuse and purulent, a ten-grain-solution of silver nitrate is pencilled over the lids twice a day, and after a few minutes washed off with warm water; as the discharge diminished the application is made but once daily; if the corneæ become affected, a two-grain solution of atropin is employed. Even in favorable cases treatment should be kept up for from four to eight weeks.

A Critical Study of Infant-Feeding based on Recent Analyses of Human Milk.

J. ZAHORSKY (*Pediatrics*, June 15, 1898) says that in spite of the great advance in the science of infant-feeding, no satisfactory substitute for mother's milk has yet been found. This is partly because it has never been possible to make absolutely accurate analyses of human milk, and partly because little effort has been made to suit the character and percentage of proteids to the infant's age. The latest analyses show that human-milk sugar differs from that of cow's milk in having a higher rotatory power, in crystallization, in containing more mucic acid, and in being less sweet; it increases in quantity as lactation advances. The fat has a higher refractive index than that of cow's milk; the quantity increases up to the fourth month and then declines, but is always somewhat variable. The percentage of proteids is highest during the first week and gradually diminishes; the daily totality varies little during early lactation, but later declines, a fact that has been passed over by Holt and Rotch. The relationship of the principal proteids is also of importance, but the accurate chemical differences between those of human milk and cow's milk are not known. Of the following tables, No. 1 is based upon the most recent analyses of human milk, while No. 2 shows the percentages used by American pædiatrists:

TABLE No. 1.

Time.	Per Cent. N.	Fat.	Lactose Anhydrous.	Proteids.	Casein.	Lact. Albumin.	Unknown Substance.	Ash.	Dried substance.
First week.....	0.33	2.9	5.5	2.0	0.8	1.2	0.95	0.34	11.7
Second week.....	0.27	3.1	6.3	1.6	0.9	0.7	0.90	0.27	12.2
Third week.....	0.24	3.4	6.3	1.4	0.8	0.6	0.80	0.25	12.2
Fourth week.....	0.22	3.7	6.4	1.3	0.8	0.5	0.70	0.23	12.3
Second month.....	0.20	3.9	6.5	1.2	0.8	0.4	0.58	0.22	12.4
Third month.....	0.18	3.5	6.6	1.1	0.8	0.3	0.50	0.21	12.0
Fourth month.....	0.17	3.0	6.8	1.0	0.7	0.3	0.43	0.20	11.5
Fifth month.....	0.16	2.9	6.8	0.9	0.7	0.2	0.35	0.20	11.2
Sixth month.....	0.14	2.7	6.9	0.8	0.6	0.2	0.27	0.19	10.9

TABLE No. 2.

Time.	Fat.	Sugar.	Proteids.
First week.....	2.00	5.00	0.75
Second week.....	2.50	6.00	1.00
Third week.....	3.00	6.00	1.00
Fourth week.....	3.50	6.50	1.00
Second month.....	3.50	6.50	1.50
Third month.....	4.00	7.00	1.50
Fourth month.....	4.00	7.00	1.75
Fifth month.....	4.00	7.00	2.00
Sixth month.....	4.00	7.00	2.25

Particularly in very young infants the proteids are too low and contain too little albumin and too little mineral matter in combination. The unknown substances are no doubt of value as stimulants, but no effort has been made to supply their lack.

Dilution of cow's milk does not bring the albumen and extractives to the proper proportion, but requires the albumen to be increased. Attempts in this direction with egg-albumen and meat juice have not been successful. Leeds has increased the soluble albumenoids by predigestion, but the result is not suitable as a constant food. Bovine serum may be of value; acid albumen is not likely to be. At present the increase of lactalbumen must be accomplished by the addition of whey, whose proteids consist principally of lactalbumen and lactoglobulin, and which contains many of the metals in their original combination. The following formulæ are suggested for the first and second weeks of lactation, respectively:

First Week.		Composition.	
Cow's milk (10 per cent. fat).....	5 fl. ounces.	Fat.....	2.50
Lime water.....	1 fl. ounce.	Casein.....	0.8
Sugar.....	96 grains.	Lact.....	0.80
Whey.....	14 fl. ounces.	Sugar.....	5.5
		Mineral.....	.65
		Unknown substances....	.26
Second Week.			
Cow's milk (10 per cent. fat).....	6 fl. ounces.	Fat.....	3.1
Lime water.....	1 fl. ounce.	Casein.....	0.9
Sugar.....	174 grains.	Lact.....	1.
Whey.....	12 fl. ounces.	Sugar.....	6.3
		Mineral.....	.65

The Nocturnal Manifestations of Disease in Children.

L. ORT (*Med. News*, June, 8, 1898) calls attention to some of the ills of children of which the special symptoms are more likely to be exhibited at night in the physician's absence; while the history may be simply of restless sleep, irritability, capricious appetite, and moping, and the child's appearance be anemic. Thread worms are to be thought of, and the mother directed to examine the child's anus or vagina in a good light, the worms tending to migrate when the body is quiet, and causing great restlessness by their irritation of these sensitive parts. Cold salt-water injections, with perhaps the administration of calomel and san-tonin, are effective treatment, but the injections should be continued for ten days. Another frequent cause of restlessness is hives, that appear only during the night and then in small numbers. "Night terrors" are frequent in neurotic children and are often the result of exciting and uncanny stories related to them; often, also, an elongated prepuce has been found distinctly causal of this condition; pin-worms should be sought for, correct hygiene instituted, and tonics prescribed; but depressant remedies, as bromides and antispasmodics, should be avoided. Unconscious nocturnal masturbation should be thought of and watched for; if discovered, the prepuce should be retracted and cleansed, the child made to sleep on his side or back, and forced to get up in the middle of the night and void urine. The writer feels very sure that when a child has penile erections from a full bladder, this unconscious masturbation is likely to follow. Of course, also, conscious masturbation is to be thought of. Incontinence the writer has

found most often due to an elongated and unretracted prepuce, together with unnaturally deep slumber. The writer has no faith in medicines, but remedies the condition of the penis, and if this be not sufficient, has the child pass water once in the night till the habit is established; out-door exercise, a cool bath at night, and the avoidance of heavy eating are important. Nocturnal spasms or jerks are usually reflex from the alimentary canal, but if fever occurs and they are not controlled by an antispasmodic, as paregoric, they are likely to lead to general convulsions. Nocturnal drivelling generally is found in neurotic children, and may be associated with a diminished secretion of urine. Treatment consists in bettering the general health and administering lemon juice, sweet spirits of niter, and large quantities of water. When the restlessness is due to pain there is generally added groaning, crying, or shrieking. Sometimes these pains are forgotten while the child is awake and diverted, and only appear during the quiet of sleep. The author recalls a child with scurvy that seemed happy and well when awake in whom the tenderness of the limbs was discovered by chance during sleep. The location of these nocturnal pains and their significance we must guess at from the child's motions, unless the pains are also present in the day and the child is old enough to talk.

The Action of Drugs in Children.

J. B. McGEE (*Cleveland Med. Gaz.*, July, 1898) says that especially in children most drugs should be given in small doses, frequently repeated. Soluble preparations should be given if a rapid effect be desired; and, as a rule, no sparingly soluble preparations of powerful drugs should be employed; active principles are usually preferable; insoluble drugs, if used, should not be in pill or tablet form; glycerin is often a better vehicle than syrup; with the exception of opium and cocain, much larger doses than are usually employed in children can probably be given with benefit. Except, perhaps, where a diuretic effect is desired, the sodium salts are better borne than the potassium salts; iodid should be pushed to saturation, then continued in small doses. Opium is liable to produce sudden collapse and convulsions; it is valuable, however, and of the liquid preparations, except the camphorated tincture, 1 drop may be given for each year of age; of the alkaloids, codein is probably preferable to morphin; no solid form, not even Dover's powder, should be given to children. Chloral is well borne, a general safe dose being 1 grain for each year, though this may be increased; convulsions and spasmodic asthma are its special indications; it also acts well as an hypnotic, but in the insomnia of cerebral congestion the bromids are to be preferred. The latter are slowly eliminated, and, if to be given for some time, their effect once gained should be maintained by one or two doses daily. Sulphonal and trional are also safe hypnotics; of the latter, 2 to 5 grains may be given to a child a year old. Belladonna is exceptionally well tolerated; 2 drops of the tincture for each year is the rule, but this dose may be safely exceeded; as a vasomotor stimulant atropin is unexcelled, being equal in power to strychnin and of greater rapidity. Alcohol is well taken and acts as a food, a stimulant, an antiseptic, and, perhaps, as an antipyretic. In great weakness, especially in pneumonia, nitroglycerin acts quickly and well. Of cardiac tonics, digitalis takes the first place, though some prefer strophanthus; the former should *not* be given in frequent doses and its cumulative action should be guarded against; if desired,

its effect on the arterioles can be guarded against by nitroglycerin. Caffein stimulates the brain and should not be employed if cerebral complications exist. Cocain should be used with great caution, especially in the weak or anemic. Strychnin is invaluable in toxic paralyzes and in cardiac asthenia, and may be given in full doses. Of cardiac depressants, the writer prefers aconite, though there is somewhat less danger of poisoning with veratrum from its tendency to produce vomiting; aconite should be used early in febrile conditions and in small and frequent doses. Mercury is especially well tolerated by children. The writer believes that chlorate of potash should seldom, if ever, be given internally, as it is extremely irritating to the kidneys; it is likely that the good results ascribed to it are really due to the iron with which it is generally prescribed. Arsenic, being so slowly eliminated, should be given in only two or three doses daily; we must remember that it is possible to get an arsenical neuritis. Antipyretic drugs are now little employed, phenacetin being the best; but better than any is the direct application of cold. Quinin is well borne and the writer uses it as routine practice in pertussis. Of antiseptics, carbolic acid should be very cautiously used, even externally; the sulphocarbolates are, however, safe intestinal antiseptics, as is also salol, though the latter would probably be contraindicated in nephritis. The salicylates may cause gastric disturbance. Creosote should be given in the form of one of its derivatives. Ferratin is one of the best of the organic preparations of iron, though the author still uses the tincture a good deal. In serum-therapy, children with diphtheria bear the most concentrated solutions well; and it is said that children bear tuberculin better than adults.

The Treatment of Pertussis.

H. A. BUCHANAN (*Practical Med.*, August, 1898) from a study of fifty cases of pertussis, seen in two epidemics and treated upon the theory that the disease is caused by a specific germ, believes it proved that the disease can be aborted or the paroxysms prevented and the course shortened according to the time at which treatment is instituted. The drugs upon which he relies are: calcium sulphid to saturation—antiseptic; atropin sulphate—antispasmodic; iodoform to control cough—antiseptic and alterative; codein orhyoscyamus—sedative; aconite, if fever exists in the early stage. In anemic cases tonic treatment was used with the effect of shortening the disease.

Osteomoclasia: a Preliminary Note on a Modified Operation to correct Curved Tibia.

W. B. HOPKINS (*Ann. of Surg.*, July, 1898) describes osteomoclasia as a double operation, an incomplete osteotomy being done, to be followed after the closure of the skin wound by osteoclasia at the weakened point. He reports one case of bow-legs in a child of three years with excellent result, the secondary operation being done eleven days after the primary. No corrective dressings were applied till after the osteoclasia. The fracture, which was incomplete, and the final result are well shown by skiagraphs. It is quite possible that in poorly nourished children in whom traumatism is likely to provoke suppuration, we may get good results by combining a later osteoclasia with a partial osteotomy. Certainly in those cases in which we are going to use osteoclasia—an operation which

has fallen somewhat into disuse but which is of value in the correction of trifling curves in children whose parents cannot go to the expense and trouble of elaborate apparatus—partial section seems a rational preliminary by reducing the force required and by locating the point of fracture; it also makes osteoclasia possible when the bone is very hard or the apex of deformity is near a joint. Moreover, as compared with osteotomy, the measure here described causes a simple, incomplete fracture, instead of a compound, and probably complete, fracture; no fixation is required during the existence of a wound; should suppuration occur after the first step in osteoclasia, it would involve only a bone cut, not a bone section, and would be much less serious than the same accident after an osteoclasia; while after the second step, the skin wound having healed, suppuration cannot occur. The writer considers instrumental osteoclasia far superior to manual.

The Persistent Thymus and Other Morbid Anatomical Peculiarities in Certain Cases of Epilepsy.

A. P. OHLMACHER (*Columbus Med. Jour.*, July 19, 1898) suggests that the reason that no constant lesion has been discovered in cases of epilepsy is that the central nervous system has been too exclusively studied to the neglect of the rest of the body. Out of eighteen autopsies at the Ohio Hospital for Epileptics, in widely varying cases of epilepsy, in eight cases an essentially uniform picture was presented. The gross pathological findings included a persistent and enlarged thymus gland; pronounced enlargement of the intestinal and lymph-follicles; more or less hypertrophy of the lymphatic glands, and the lymphadenoid follicles of the tongue, larynx, trachea, esophagus, tonsils, and even of the stomach; a narrowing of the arteries; an abundant development of fat, and osseous changes indicative of old rickets. Not all these peculiarities were present in a single case, but the enlarged thymus, with one or more of the other features, was constant. The patients varied in age from seventeen to thirty-five years; except one, all had had epilepsy from childhood; six were cases of idiopathic *grand mal*; three had died *suddenly*, being found dead in bed after having retired in apparent health. Two other morbid conditions are found associated with enlarged thymus—laryngismus stridulus and sudden death in adults, with no assignable lesion, both as mysterious in origin as epilepsy; and here, also, are found general lymphatic hyperplasia, narrowing of the arteries, and evidences of rickets. This condition the Germans call "the lymphatic constitution," and the fact that its lesions are the same as those found in a certain proportion of cases of idiopathic epilepsy, taken in connection with the sudden death of three of the latter cases, suggests many interesting lines of thought, to follow which, however, much more prolonged pathological research is necessary.

A Bivalve Plastic Splint for Pott's Disease.

H. L. TAYLOR (*Pediatrics*, August 1, 1898), while considering the plaster jacket inferior to a steel support in the treatment of Pott's disease, finds it necessary in dispensary practice and of much value if properly applied. It does not afford separation of the affected vertebræ but it does give an excellent antero-posterior support; this support, however, as the jacket is generally put on, is of

short duration, because active suspension ceases the jacket and the thorax become adapted to each other. In order to get good results the jacket should act like a steel splint as much as possible; the posterior half should be rigid, and the force applied from behind forward to the affected part of the spine, in front from before backward to the upper and lower parts of the trunk. Thick strips of felt should be fitted to the back upon both sides of the spinous processes without impinging upon them. The jacket is then laid on, but instead of being cut down the front, which soon causes loss of rigidity and support, it should be divided down each axillary line, the halves being joined to each other by webbing and buckles, at least four upon each side. The leverage should then be increased by strips of felt laid across the upper and lower ends of the anterior half, and a half or more be removed from each lateral edge, the fact that the two halves can be readily approximated thereafter showing that the previous leverage was insufficient. The jacket should reach from the top of the sternum to the pubes. Instead of bandages and suspension, the patient may be supported by rests under the pelvis and upper sternum, and eight or ten pieces of crinoline dipped in plaster molded to the back to form the posterior valve, the anterior one being then molded in a similar way. A jacket applied thus is easily removable; if more leverage be needed it is easily gained by reinforcing the felting or by paring the lateral edges. The same general measures as usual should be employed; and if the disease be in the lower lumbar region the patient should be kept recumbent on a special frame; if in the cervical region, a head support should be used—a chin-cup or an occipital support resting upon steel bars incorporated in the anterior or posterior valves of the splint, respectively.

GREAT BRITAIN.

A Case of Genu Recurvatum.

A. M. SHIELD (*Lancet*, May 28, 1898) reports the case of an infant eight weeks old whose legs were hyperextended on the thighs at an obtuse angle, with a transverse furrow across the front of the joint, the toes pointing toward the abdomen. The limbs were flexed and somewhat straightened under chloroform, but ten days later the child died. Examination showed normal arrangement of the soft parts of the popliteal space, except that the ham-string muscles were stretched over the prominent condyles; the posterior ligament was also much elongated and stretched. The tendon of the quadriceps ended normally in the patella, but the position of the bones brought the latter to the front of the femur above the intercondyloid notch, to which its under surface, non-articular, was attached by a tough, fibrous aponeurosis; the crucial ligaments were normal in position but short; the capsule and lateral ligaments were tough and contracted and till they were divided the bones could not be brought into position; the articular surface of the tibia lay on the front of the articular surface of the femur in the position usually occupied by the patella, while the condyles of the femur projected markedly backward. The process of straightening had not affected the articular positions but had bent the tibia at its epiphyseal junction. This rare deformity is due to malposition *in utero*, the legs being extended instead of flexed on the thighs. Early treatment should be adopted and should consist of gradual flexion and splinting of the limbs; should this fail, it is better to wait till the

child be a year or two old and then divide the capsule and ligaments by an open operation.

Fracture of the Neck of the Femur in Childhood

R. H. RUSSELL (*Lancet*, July 16, 1898) comments on the difficulty often experienced in early diagnosis of hip disease, none of the symptoms of which may not be due to other conditions; as a point of negative diagnosis, however, he considers wasting of the affected limb infallible—that is, if there is no wasting the case cannot be one of hip disease. He describes the case of a girl, 3 years old, lame from a fall upon the right hip three weeks previously; movement of the hip was resented; as she lay there was flexion and eversion of the limb; there was more or less dropping of the gluteal fold; pain at night was not marked, and the flexion but not the eversion could be overcome. There was no wasting. Measurement of the affected limb showed a shortening of half an inch, and this was proved to be in the neck of the bone, the trochanter being half an inch above Nelaton's line; this could not be the result of absorption in a case of hip disease of six-weeks' standing, and the case was thus proved to be fracture of the neck of the femur. This injury has been much overlooked in young children in the past, fractures being frequently treated as hip disease; the immediate result is fairly good in spite of the error, but the shortening steadily increases as time goes on. This, the writer thinks, is due chiefly to the altered position of the upper fragment containing the growing epiphysis, which comes to point directly outward instead of obliquely downward; the epiphysis goes on growing but does not increase the length of the leg at all, while the other leg grows normally; and to this real shortening is added an apparent one, due to adduction of the limb increasing with the horizontal lengthening of the neck; of course, these considerations do not apply to the same injury in an adult. In treatment the indication is to open out the angle formed by the neck with the shaft, fixing the trochanter with one hand while the thigh is abducted with the other, and applying a retentive apparatus. The author would prefer to do this about three weeks after the injury when the soft union will prevent any separation of the fractured surfaces. In old cases it would seem that much might be done by osteotomy either of the neck or of the shaft just below the trochanter.

Gastro-Intestinal Hemorrhage in a Newly born Child; Treatment by Large Doses of Calcium Chlorid; Recovery.

L. A. PARRY (*Ibid.*) describes a child born of healthy parents with no history of hemophilia, who seventy-two hours after birth vomited blood and shortly afterward had three bloody motions; on each of the two following days there were four bloody motions but no further hematemesis. None of the causes usually assigned in these cases applied to this one. Treatment consisted of very frequent 5-grain doses of chlorid of calcium, sometimes as often as every hour; in all one hundred and sixty grains were given in three days. The bleeding began to lessen in twenty-four hours after its administration and ceased in forty-eight hours. This is the first case in which the writer has seen any benefit from the use of this drug. Under the later administration of iron the child rapidly recovered from the resultant anemia.

Remarks on Scarlet Fever.

J. W. WASHBOURNE (*Clin Jour.*, June 1, 1898) says that while we know nothing of the micro-organism that probably is the cause of scarlet fever, we can formulate some of the properties of the virus, namely: that it is capable of remaining alive outside the body for some time; that it can be transmitted a short distance through the air; that it can multiply as well as remain alive outside the body, several epidemics having been traced to milk, in which we may infer that it can multiply; that it is destroyed by the usual methods of disinfection. Probably this virus generally enters the body through the fauces, but in the cases of so-called surgical scarlet fever, while many of them may be contracted in the usual way, it seems necessary to suppose that in some the entrance of the virus is through the wound; for instance, patients suffering from burns are more liable to scarlatina, and it seems fair to suppose that this is due to the extensive area of subcutaneous tissue exposed; moreover, many cases of scarlet fever that present open wounds show a typical rash, but no inflammation of the fauces, and in these it is natural to infer that the virus has entered through the wound. The belief that the skin contains the virus, and certainly that the disease is most infectious during the period of desquamation, is not borne out by the facts; it may have arisen from the fact that the patient is usually free from infection by the time desquamation has ceased; but it is certain that many patients in the stage of desquamation have not conveyed the disease, while infection has occurred from a number of patients in whom the process had ceased; probably in these latter the virus remained in the fauces as in diphtheria. There is also no ground for supposing that the virus is distributed throughout the body, as all the systemic effects may be attributed to toxins. The variation in virulence of the disease may be partly due to variations in virulence of the bacteria but must be also ascribed to the different predispositions of the patients; and, in the writer's opinion, most of the severe cases are due to an infection mixed with that of a pathogenic streptococcus, for we may distinguish clinically pure scarlet fever from the same disease complicated by a septicemia due to a streptococcus; and it is to the latter category that most fatal cases belong. Fatal cases in which there is little involvement of the throat belong to the class called scarlatina maligna; but in the more common type of the disease with severe inflammation of the throat (scarlatina anginosa) the symptoms are referable to a septicemia starting in the fauces; in these cases we should expect benefit from antistreptococcic serum, but the writer has met with no success from this line of treatment. Most interesting is the association of scarlet fever with diphtheria; it seems certain that patients convalescing from scarlatina are more liable to diphtheria, sometimes also the diseases run concurrently, and it is important to make a bacteriological examination of the throats of all scarlet-fever patients.

The Diagnosis of Diphtheria of the Conjunctiva.

S. STEPHENSON (*British Med. Jour.*, June 18, 1898) says that diphtheria of the conjunctiva is somewhat rare in Great Britain; it is much more common in children than in adults, females being rather more liable to it than males; it especially attacks children that are run down from some infectious disease or that have had a recent affection of the conjunctiva. It is usually bilateral, the

second eye being generally attacked some time after the first. The disease occurs in three forms: interstitial, superficial membranous, and merely catarrhal. Diagnosis is by no means simple. Sometimes there may be a clear history of infection which will lead to a correct diagnosis. Occurrence of diphtheria in some other part of the body would suggest the nature of the lesion; and after the disease loss of knee-jerks or paralyzes would be almost conclusive. Albuminuria, if present, would be a helpful sign. The occurrence of membrane is not in the least pathognomonic, being found in so many other conjunctival conditions, nor its appearance or closeness of adherence. No more conclusive is the appearance of the conjunctiva when the membrane has been peeled off, though we might feel tolerably certain if it appears densely infiltrated ("brawny") and presents small, dark-red hemorrhages. Swelling of the preauricular glands occurs in many kinds of conjunctivitis. In short, there is no positive method of diagnosis except the bacteriological examination; the making of cultures should no exclude the simpler method of direct microscopical examination of the discharge, in which the Klebs-Loeffler bacilli may be so numerous and characteristic as to prove the nature of the disease; they must not, however, be confounded with the xerosis bacilli.

AUSTRALASIA.

Removal of a Large, Fatty Tumor from the Large Intestine of a Child—Recovery.

H. R. NOLAN (*Australasian Med. Gaz.*, April 20, 1898) describes the following case in a child two and a half years old. The mother said that the abdomen had always seemed large, but had become more swollen of late. On examination, the swelling gave all the signs of hydatid of the liver, even to an apparent slight hydatid thrill. Incision, however, showed it to be due to a fatty tumor, which was attached by peritoneum for six inches to the descending colon. A large incision, crosswise, was necessary for its removal; no drainage was used and the child made an interrupted recovery. Contrary to the usual view this tumor was sessile; its weight was five pounds. The writer has been unable to find references to but very few fatty tumors of the peritoneal cavity and to none approaching the above in size.

OBSTETRICS.

UNITED STATES.

Pseudo-Puerperal Convulsions Due to Dystocia.

F. ANERY PEARCE (*Philadelphia Polyclinic*, July 30, 1898) reports the case of a primipara, aged 17 years, a colored rachitic dwarf, seen by him with Dr. L. J. Hammond, February 15, 1898, in puerperal convulsions at term. The origin of the convulsions was obscure. Examination of the urine, which was abundant, was negative; specific gravity, 1022, acid; no albumen, glucose, or indican could be found. There was little nausea or vomiting. For the previous twelve hours she had suffered increasing expressive labor pains. They had become so dense

as to tax her muscular system to the utmost. The pelvic outlet was contracted and of irregular outline, and yet not so extremely but it seemed possible for a normal head to be delivered. At the height of her pains, about six hours after labor began, a peculiar rigidity of the general muscular system was noticed; half an hour later she went into several tonic and then clonic convulsions with frothing at the mouth. She would remain rigid for a minute, then the uterine contraction would relax and finally the general rigidity abated, followed by prompt recovery of consciousness. There was no subsequent stupor. Veratrum viride had been given in full doses without relief. When seen by the writer at the twelfth hour of labor the condition was unabated. She was non-hysterical. Chloroform inhalations controlled the convulsions at the height of the labor pains. Six ounces were used in about two hours. The negative condition of the urine, the short-lived unconsciousness, absence of temperature, and septic state, led to the diagnosis of reflex non-hysterical convulsions. It was concluded that the insuperable obstacle to delivery was due to a very large child rather than contracted pelvis and not alone to uterine inertia. Axis-traction forceps proving unavailing, the child being undoubtedly asphyxiated, Cæsarean section was feared as likely to be fatal to the mother. Craniectomy was decided upon and performed under chloroform narcosis. A rapid delivery was accomplished and the uterine spasm and general convulsions ceased at once. The patient was perfectly comfortable except greatly exhausted. There was no rise or fall of temperature and she made an uneventful recovery. The child weighed seven pounds. May 23d the patient reported in normal health, her urine being still negative. This case is of unusual interest because of the entirely reflex origin of what might be called pseudo-puerperal convulsions. The percentage of death in true puerperal eclampsia being thirty to seventy per cent. the importance of such rare conditions is evident. In such a case time would be wasted by other treatment and harm done by such measures as venesection, though useful in toxic cases.

In the case reported exactly opposite mechanical conditions exist from those in an ordinary puerperal eclampsia in which both the *accouchment force* is reflexly set up by the general cerebrospinal convulsion; whereas, in the case reported the primary spasm took place in the uterus at the ninth month, and finally spread to the spinal, then cerebral centers.

Vomiting in Pregnancy.

E. H. WILSON (*Mass. Med. Journal*, July, 1898) after referring to the various etiological theories held as to vomiting in pregnancy, says that in his opinion the ultimate and prime cause of this vomiting is the "*pressure exercised on the blood-vessels by the gravid uterus.*" Irregularity of circulation is thus increased, causing edema of the lower extremities. "The brain must, in a measure, be improperly emptied and badly ingested." Its function disordered, hence the derangement of the stomach through sympathetic media. In cases where the pelvis is small and the abdomen contracted we have the most persistent vomiting. On the contrary, when the pelvis is roomy and the fetus small, vomiting is absent. The recumbent position tends to increase the pressure which accounts, the writer thinks, for the *morning nausea* which passes off during the day. He cites a case where by placing the woman on her belly with the hips raised above her head all vomiting ceased, due to removal of pressure.

Labor Complicated by Fibroid Tumor.

INEZ C. PHILBRICK (*Western Med. Review*, June 15, 1898) reports the case of a primipara, aged 40 years, seven-and-a-half-months' pregnant, who had suffered from severe pains in her right hip and thigh for some days, also with a very tender spot in the right side of her abdomen. Her urine was found to be normal. The fetal movements were very strong, causing discomfort. Hydramnios was also marked. Sodium salicylate in 15-grain doses t.i.d. relieved the sciatic pain. About two weeks later the membranes ruptured and five quarts of amniotic fluid was collected; much more was absorbed by the bed and clothing. Two days later labor pains began, griping in character. On arrival of the writer, three hours after, a fetus was found to have been delivered, by the assistance of a neighbor, which was an anencephalus female monster, weighing four pounds, and measuring fourteen inches in length, of eight-months' development. There was very slight loss of blood. Uterine contractions failing to expell the placenta, strychnin, $\frac{1}{30}$ grain, was administered hypodermatically. Irregular uterine contractions finally occurred when a mass the size of a fetal head was felt projecting from the right side of the uterus anteriorly, which was at first thought to be a second fetus but was soon recognized as a fibroid. As the placenta failed to be expelled, an attempt was made to remove it manually under chloroform given by the husband, as no aid could be obtained, and with much difficulty it was removed. It was small, friable, pale, and rent, the membranous envelop on its fetal side alone uniting the fragments. After three-hours' rest, with the assistance of another physician who gave the anesthetic, the uterine cavity was completely explored. A few loose placental fragments were removed. The placental site corresponded with that of the fibroid. The size and location of the fibroid was carefully determined. Careful asepsis was observed. Ergot was given to aid in the absorption of the fibroid during involution: The patient made a good recovery. At the end of three weeks the fibroid was reduced to the size of a small orange, and at the end of six weeks was not perceptible, the uterine cavity measuring three inches.

GREAT BRITAIN.

A Case of Puerperal Septicæmia with Subnormal Temperature Throughout.

JAS. J. HARDING (*Lancet*, July 9, 1898) reports the case of a V. para, aged 40 years, whose previous confinements were uneventful; all children living. The woman was first seen by the writer, February 28, 1898, at 9 P.M. The membranes were said by the nurse to have ruptured February 25th, at 2.30 A.M. The patient was very anemic; pulse weak and 120; temperature, 97° F. Os dilated and head in first position engaged high in the brim; uterine contraction feeble; fetal head 140. *Congregata vera* measured $3\frac{1}{4}$ inches. The child was delivered by forceps with some difficulty. Asphyxiated but subsequently resuscitated. The placenta and membranes were expressed entire. There was no hemorrhage. The uterus was washed out with a 1-3000 sublimate solution and a hypodermic injection of ergotinun, grs. $\frac{1}{100}$, given. Her pulse was 110, temperature 97° F., when left by the writer. March 1st the lochia was very foul in odor; temperature, 97° F.; pulse, 150; vomiting. The uterus was washed with a 1-2000 sublimate solution. Ergotinun, grs. $\frac{1}{100}$, and strychnin, grs. $\frac{1}{60}$, were given hypodermically. From

this on her condition remained practically the same until death on March 5th. Uterine irrigations with lysol were frequently given, also tamponing of the uterus for its flabby condition. Ergotinin and strychnin were continued, the pulse ranging from 110 to 156, the temperature never rising above 97.2° F. Abdominal tenderness and tympanites were almost absent. Curettage, or antistreptococcic serum were not resorted to owing to her feeble condition. Stimulants and nourishment were freely employed. The temperature record was checked by a second thermometer and an independent observer.

Morphin in Uræmic Eclampsia.

LOUIS A. FRANCIS (*British Med. Journal*, July 15, 1898) reports the case of a III. para, whose previous deliveries were normal, who was delivered May 29th, at 10 P.M., with ease. She had, however, suffered with headache and edema of the legs for a "few weeks" previously. Vomiting began one hour after delivery. At 7 A.M., May 30th, she was seized by a convulsion, at 10 A.M. with a second; hot applications were applied to the back and a hypodermic injection of pilocarpin, grs. $\frac{1}{2}$, and morphin, grs. $\frac{1}{2}$, was given. Further convulsions occurred, growing more severe and frequent toward evening. Her temperature never rose above 100° F., nor was the pulse increased in frequency. Insensibility was marked between the convulsions. As nourishment could not be retained by the stomach she was fed by rectum. At 8 P.M., after the seventh convulsion, a small quantity of urine was obtained by catheter and found to contain albumen enough to solidify the specimen when boiled. A second hypodermic injection of pilocarpin, grs. $\frac{1}{2}$, and morphine was given, and hot bottles packed about the patient. During the night she was comatose, with slow, snoring respiration, small pupils, and profuse sweating, but no convulsions. At 10 A.M., May 31st, she awoke sensible, without recollection of what had transpired, but complained of a sore tongue, which was found to have been bitten. She was given a purgative, followed by a diaphoretic mixture, and put on milk diet. She made an uninterrupted recovery. June 11th there was but a faint trace of albumen in her urine. No milk appeared in the breasts.

Chorea Complicating Pregnancy.

J. H. ASHWARTH (*British Med. Journal*, July 9, 1898) reports the case of a primipara, aged 27 years, in the eighth month of pregnancy; of a nervous temperament, and had been treated for anemia for a long time, who, without history of previous chorea, rheumatism, or scarlet fever, was attacked with choreic symptoms, limited at first to the right side but soon became general. Her heart and urine were found to be normal. Arsenic and iron were given. She became so much worse fourteen days later as to be unable to stand. Even when recumbent her head and limbs were in constant motion day and night, except when asleep. Chloral and potassium bromid were substituted, but the intensity of the symptoms only increased. As there was no indication of labor being established, bougies were introduced under chloroform narcosis. Uterine contraction did not appear until twenty-four hours later; the progress of labor being slow, twenty-four hours after the commencement of uterine contractions forceps were applied and a living male child delivered in thirty minutes. A rupture of the perineum occurred which was sutured. Chloroform was administered for three-quarters of

an hour in all. On recovery from the anesthetic the patient was seized with the choreic convulsions with all their previous intensity, and died four and a half hours later, apparently from exhaustion. Her mind was clear throughout the entire attack. The child was delicate and affected with "twitching movements."

CANADA.

Continued Irrigation of the Uterus versus Hysterectomy in Acute Puerperal Septic Metritis.

HORACE MANSEAU (*Montreal Med. Journal*, July, 1898) in reporting seven cases of continued irrigation of the uterus in acute puerperal septic metritis says, that all the teaching of modern surgery urge the necessity of drainage; for this purpose the head, abdomen, and chest are opened. Why should not the same rule apply to the treatment of a septic uterus, whose cavity is especially favorable for the development of septic bacteria, the natural drainage of which is imperfect, due to the contraction of the os and sphincter vaginæ. Curettage should first be done, preferably with a dull curette, and afterward continued irrigation maintained. By this method the removal of the uterus may be obviated and future pregnancies occur. All of the seven cases reported recovered and five of them became pregnant again; the other two cases were lost sight of.

Case I.—III. para, aged 28 years. Labor normal at term; placenta expelled intact; perineum uninjured. On the fourth day the patient had a chill; pulse rose to 126; temperature, 103.5° F. Vaginal douche, 1-6000 sublimate solution, was given every three hours. On the fifth day she had another chill; temperature, 104.5° F.; pulse, 135. No fetor is evident. A mucopurulent vaginal discharge appeared. Intra-uterine douches were given every three hours with no marked improvement, except for a short time after each douche. The patient had chills lasting for an hour, followed by profuse sweating; pulse very weak. On the sixth day continued irrigation was begun. Sterilized water was kept flowing continually for twelve hours at the rate of seven or eight gallons an hour, and on the seventh day the temperature had fallen to 100° F., and the pulse to 115. General condition improved. Irrigation was stopped five hours later; the temperature was higher than ever. On the eighth day the irrigation was resumed and kept up for twenty-four hours; the temperature fell by this time to 99.5° F.; pulse, 110. During the absence of the writer a midwife who had been obtained had stopped the irrigation and assured the family that the case was a simple one. The patient's temperature had risen, and on the tenth day was 106.5° F.; pulse, 180. The husband again sent for the writer to take charge of the case, who found the patient delirious, abdomen tympanitic, the vagina bathed with pus. Several chills had occurred. Dr. Wallack was called in consultation, who concurred in the opinion that the irrigations should be reestablished. From seven to twelve gallons an hour were passed by means of a No. 12 male catheter in air tubes. After forty hours with but four intermissions of an hour each the temperature fell to 100° F. Even during the one-hour intervals the temperature began to rise. On the twelfth day a few hours' rest was allowed, with the result of a slight chill and a rise of temperature to 101° F. Irrigation was again commenced and kept up with intermission of not over three hours for three days longer, when convalescence was established. If less water was allowed to flow than stated the temper-

ature began to rise and even an hour's cessation allowed of a rise of from one-half to one degree. Over 2200 gallons were passed into the uterine cavity during ten days of continuous irrigation. On the tenth day of the puerperum the patient developed pneumonia. This most severe case might well be considered as one calling for hysterectomy.

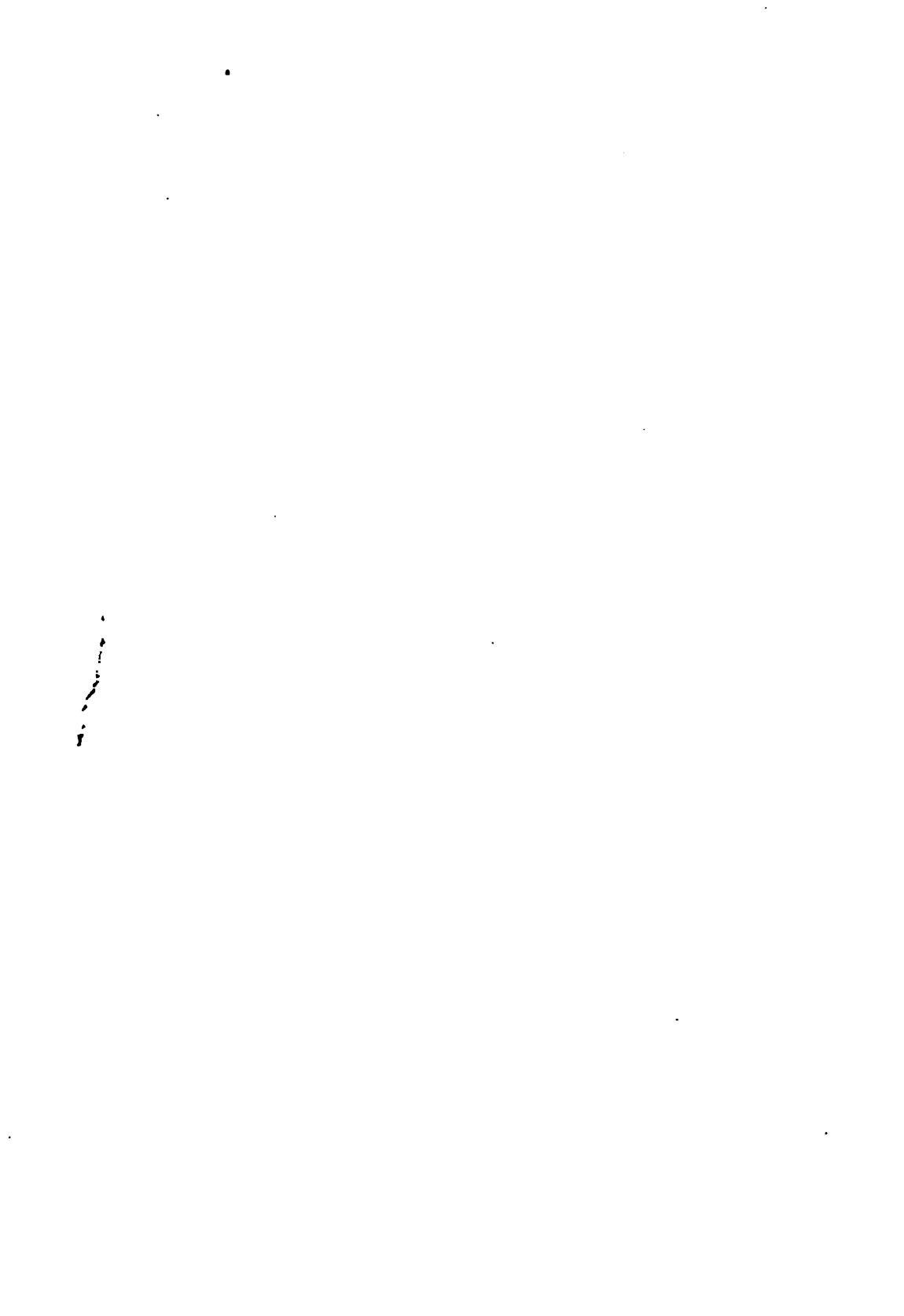
Case II.—Seen on the twelfth day for the first time. Temperature, 105° F.; pulse, 150; abdomen tender; lochia fetid. Irrigation for thirty-six hours with four intermissions of one hour each reduced the temperature to 100° F. At the desire of the patient the irrigation was discontinued, but the temperature rose. Six days of irrigation resulted in complete recovery.

Case III.—VI. para. Natural labor, except laceration of cervix. Four days late her temperature rose to 103° F.; pulse, 120. Severe chills occurred. The uterus was douched seven times at intervals of three hours, but the next day she was worse; temperature, 104.5° F. Continued irrigation was commenced, using from five to six gallons of water an hour, with short intervals of suspension. Yet the temperature did not decline. After thirty hours the amount of water was increased to ten gallons an hour, and after eleven days recovery was complete.

Case IV.—Seen first on the ninth day of her puerperum. Patient's temperature was 104° F.; pulse, 140. No discharge. Curettement the next day removed a large quantity of detritus. Intra-uterine douches kept up for twelve hours without effect. On the twelfth day continuous irrigation at the rate of eight gallons an hour was begun. The temperature fell from 105° to 101° F.; during a short rest of two hours it rose to 103° F. The irrigation was again instituted and continued for three days, when the temperature became normal.

Three other similar cases could be reported, in all of which recovery took place. It is found necessary to keep up the irrigation until the uterine cavity has undergone repair in order to secure permanent recovery.

The results of this treatment is sufficient to warrant its use, especially as it preserves the organs for future pregnancies, even if the results from hysterectomy are as good for the recovery of the patient.

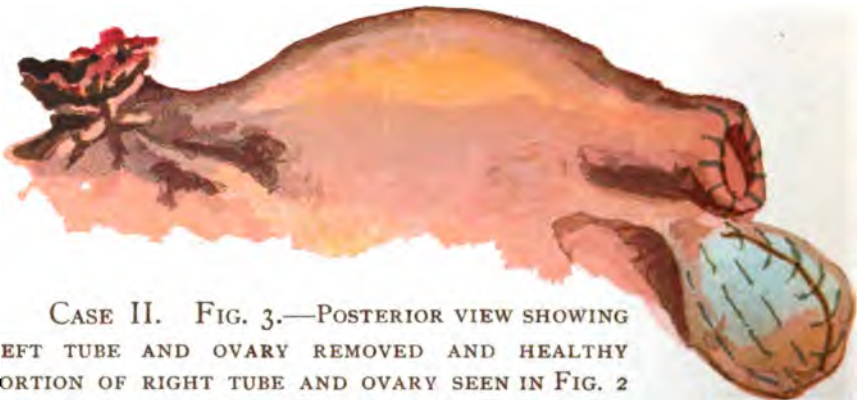




CASE I. FIG. 1.—SHOWING APPEARANCE AFTER TUBE WAS AMPUTATED AND OVARY SEWED UP. BOTH SIDES WERE ALIKE.



CASE II. FIG. 2.—ANTERIOR VIEW SHOWING REMAINING HEALTHY PORTION OF RIGHT OVARY.



CASE II. FIG. 3.—POSTERIOR VIEW SHOWING LEFT TUBE AND OVARY REMOVED AND HEALTHY PORTION OF RIGHT TUBE AND OVARY SEEN IN FIG. 2 SEWED UP.

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AMERICAN GYNÆCOLOGICAL
AND
OBSTETRICAL JOURNAL.

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A FURTHER REPORT UPON CONSERVATIVE SURGERY
OF THE UTERINE APPENDAGES.*

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I wish to preface my remarks with a statement that the term "Conservatism" as used by me, is only intended to convey the idea of saving some portion of the appendages, and not at all to indicate a minor operation, for I believe that much of the work has been more dangerous and much more radical than a hysterectomy even, in many cases.

On December 8, 1896, I read a short paper before the Woman's Hospital Society, setting forth the results of my work with conservative surgery upon the uterine appendages, and reported sixty-eight (68) cases so treated. That paper was published in the AMERICAN GYNÆCOLOGICAL AND OBSTETRICAL JOURNAL of February, 1897.

In October of 1897, I again read another short paper before the New York State Medical Association, giving my results in eighty-eight (88) cases. This article was accompanied by two cuts showing anti and post-operative conditions of the appendage. This article was published in the *American Journal of Obstetrics*, Vol. 37, No. 1, 1898.

I do not propose at the present time to inflict upon you a rehash of what I have already published, for that, if you desire, you can read at your leisure, but what I do desire is to show, if possible, in a concise manner some advance upon my previous work, and give you

*Read before the American Gynæcological Society, May, 1898.

full reports of two cases which, it seems to me, will be sufficient evidence that such work should not be condemned.

In my last report of eighty-eight (88) cases, I acknowledged that I had not the courage to attempt such work where a history of gonorrhœa existed or where I could even find suspicious signs of it having existed, and I presume I should still be harboring that fear were it not that in attempting to do such an operation before Dr. Gordon of Portland and Dr. Gardner of Montreal I stumbled upon a condition I little expected to find and, being somewhat ashamed of my mistaken diagnosis, I determined to pursue my original plan. So without knowing it at the time, I did a conservative operation upon a young woman afflicted with an acute double pyosalpinx that proved to be gonorrhœal. The ease and comfort with which this woman progressed to a perfect recovery without the slightest evidence of peritonitis or inflammation about the remaining portions of the appendages were a revelation. The history of this patient is as follows:

Puberty at 14; married at 21, three months previous to my having seen her. Menstruation always regular and almost painless, a little pain only on the first day—up to time of marriage—flow 5 and 6 days—some leucorrhœa; no history of pregnancy. Trouble for which she came began two (2) months after marriage, was attended by pains in the pelvis, severe in character and aggravated by any exertion. Sexual intercourse was impossible owing to the severe pain caused by the effort. Examination showed external genitals and vagina normal, uterus lying in position of retroversion and very tender; tubes and ovaries were not prolapsed but apparently bound, as was the uterus, by adhesion. Not finding any physical signs about the vulva and urethra, which I have previously laid stress upon, as evidence of infection, and not getting any history of such from the woman I was not looking for a gonorrhœal condition within the pelvis. The woman was ready to accept any form of treatment that would relieve her suffering, and I admitted her to the hospital for operation for restoration of the uterus, and to do whatever else might be indicated at the time. The uterus was first curetted. Upon opening the abdomen I found I had to deal with double pyosalpinx, the outer half of each tube being distended with pus, and the fimbriated extremity of each tube being firmly glued to the ovary, and each appendage adherent to surrounding structure by fresh but quite firm adhesions. In manipulating the left tube to free it from adhesions, the occluded fimbriæ gave

way, and the contents of the tube escaped into the pelvic cavity. Not knowing at the time that it was gonorrhœal, I did not fret about it, but simply washed it out by water poured from a pitcher into the pelvis. I hesitated for only a moment as to what to do with the tubes, but proceeded to amputate them, as I have previously described, removing all but two inches. All adhesions were then thoroughly curetted from off the ovaries, one or two cysts punctured, then the surface of each ovary was thoroughly touched all over with pure carbolic acid and this washed off with proof alcohol, and the latter with sterilized boiled water; the tip of the tube was then tacked to the ovary with one suture. The appendages were then thoroughly dried and returned to the pelvis, the uterus then fastened forward and the wound closed and the patient put to bed.

The amputated tubes were at once sent to the laboratory for examination, and the report returned the next day by Dr. Brooks, in charge of the laboratory, showed abundant evidence that the condition was one of gonorrhœal infection.

The microscope revealed the gonococci.

The staining process showed gonorrhœal condition.

The character-groupings of the cells and negative stains by Grams' method showed gonorrhœal infection.

The progress of this case was watched with interest. The highest temperature that she had during her convalescence was 101.40°, pulse, 108, and this was due to having taken cold on the sixteenth day and suffering from sore throat. At no time during her convalescence did she show a rise of temperature, tympanites or tenderness from the intrapelvic condition.

The after history of this case is equally interesting. The woman left the hospital on the 20th day and did not again return. Having secured her address from the hospital records, on Saturday evening last—May the 21st—almost five months to a day after operation I hunted her up, made a thorough examination of her, and secured the following statement as to her condition after leaving the hospital.

She was menstruating when the operation was made on January 23rd; menstruation returned again about the 1st of February, and was unattended by the slightest pain, whereas before the operation she was obliged to take to bed, where she suffered, as she said, from fierce pains. She has menstruated four times since the operation, twice going seven days over her regular time. At those times thinking herself pregnant, with all the symptoms of pregnancy, she

visited her family physician and got medicines to bring her around. On these two occasions she had pain for half a day, apparently from the medicine, as menstruation would appear on the day after taking the medicine. A copy of the prescription is appended.

℞ Capsules Apioline each m. 3. No. 24 Sig. One night and morning. This, as you know, is an oleoresin from Parsley fruit.

At the time of operation she weighed 87 pounds; six months after the operation she weighed 111 pounds, showing the improved condition in her general health. Menstruation is somewhat more profuse since the operation, although not prolonged as to number of days. It is unattended by any abdominal tenderness. From being a helpless invalid before operation, she is now able and does her own housework, including her laundry work, and says she enjoys it.

Physical examination showed the uterus to be in good position, and the appendages so far as I could make out, healthy and all right. There was certainly no deposit about the uterus, neither was there tenderness.

In private conversation with the husband, his answers to my questions respecting gonorrhœal infection raise the question of veracity in the husband *versus* chastity in the wife; he claiming never to have had gonorrhœa, but to having contracted it from his first marital intercourse, while she claimed never to have had any trouble except a simple leucorrhœa, and her first trouble to have commenced two months after marriage. Certain it is that he had the gonorrhœa which was accompanied by a bad orchitis. The uneventful recovery in this case gave me courage sufficient to deal with the next to follow of a similar nature.

On January 27th, four days after the former case had been discharged from the hospital, I was consulted by a physician with regard to his wife. Her history, as given by him, was briefly as follows: 29 years of age, matured at fourteen, always irregular; at first menstruation was too frequent, but later she would run over time. It was always attended by pain. The husband acknowledged that just previous to marriage he contracted a gonorrhœa, but supposed that he was cured of it at the time of marriage. Marital relations excited a return of the trouble and he communicated it to his wife. From that time on she has been an invalid. She suffered from repeated attacks of pyosalpinx, which would finally make its exit through the rectum. This condition had increased upon her

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CASE II. FIG. 4.—POSTERIOR VIEW SHOWING FISTULA FROM TUBE TO BOWEL, AND SHOWING FIG. 2 OPENED.

until it had become an almost monthly occurrence. He brought his wife to the city and placed her in one of our hospitals. The surgeon in attendance informed him that nothing short of a hysterectomy could be done for his wife. He was so shocked and frightened that he at once removed her from the hospital to a boarding-house and came to consult me, he giving as his reason for so doing, that he had read what I had published on conservative work upon the ovaries. With such a history the outlook was not a pleasant one, and I would promise him nothing. I consented to see his wife, and if operation could be made, I would do the best I possibly could. He accepted the situation and she came to my house, and he stood by while I did the operation, which I will give but a short description of, as I have chosen to better illustrate the condition by some colored drawings, sketches of which were made at the time.* The operation was performed on January 30th. As the condition would seem to show my only excuse for daring to do such work was the fact that the husband, a physician, stood by and begged me if possible to preserve the function of menstruation to his wife; he was willing to abide by the after-result. Upon opening the abdomen the entire pelvic contents were found to be adherent *en masse*. I finally separated one organ from the other and found the left appendage to be the one discharging through the gut. It was hopelessly diseased—the ovary a mere shell distended to the size of an orange with pus, and the latter communicating with the contents of the tube through an opening in the side of the ovary. The tube contained about two ounces of pus, and was distended to its uterine junction. This appendage had not been discharging through the bowel for a few days, so I aspirated its contents and then re-injected it with solution of bichloride of mercury, then pumped this out before attempting to break up the deep pelvic adhesions. As I reached the site of the opening in the gut, I cut away that portion of the tube covering it and allowed it to remain upon the gut. The appendage was then tied off as shown in Figure 3. The right appendage was then brought up and found to be in a condition as represented in Figure 2. The outer two-thirds of both ovary and tube distended with pus. There seemed not a loophole of escape from complete removal, but the Doctor urged me so to try and save a portion, that I attempted it and did the work as shown in Figure 3. I was obliged, as you can see, to put three rows of sutures through and

* I wish to give Dr. John Aspell of New York, credit for the drawings here exhibited.

through the ovarian structure in order to hold it in close apposition. The bottom of the pelvis or Douglas' cul-de-sac, was much thickened and bled quite freely from the sites of the broken adhesions. It was necessary to use drainage, so I opened the cul-de-sac quickly through the vagina then, after carrying a portion of the gauze through into the vagina, I packed the pelvis quite solidly (using 5 per cent. dry iodoform gauze). When this was accomplished, I allowed the stump of the ovary and tube to rest lightly on top of the gauze-pack. The wound was sewed up and patient put to bed and well stimulated. The gauze was allowed to remain five days undisturbed. It was all removed on the 7th day and none replaced, and the cul-de-sac healed kindly. The bowel was simply let alone. No enemas were allowed given, and the fistula did not re-open. The patient made an uneventful recovery, temperature at no time going above 102°, and that on the second day, but it quickly dropped under the application of the cold-water coil and that was at time of movements of the bowel, and due to nervousness, for it would at once drop after the movement was accomplished. She left the Sanitarium at the end of the fourth week. An extract from a letter received from her husband on Saturday will tell what her condition is at present. I had forgotten to say that the microscope showed it to be a specific infection in this case also.

"In response to your inquiry respecting my wife's present condition, will say that she has gained eight pounds. Soon after I wrote you, her menstruation appeared and though she had some pains, she got up after a few days and has been remarkably well ever since."

I have chosen to pick these two cases from a series of one hundred and three consecutive operations upon the uterine appendages now on my record-book (without a death or without inflammation except in one case) and report them to you in full, rather than generalize upon the whole series. I do not wish you to accept this work as a distinct advance in pelvic surgery without just criticism, but such I consider it and I have placed it before you to show what can be done with such cases of gonorrhoeal pelvic infection if you choose to undertake it.

INFECTIVE PERITONITIS, WITH SPECIAL REFERENCE
TO A SUGGESTED METHOD OF IMPROVING
THE PRESENT METHODS OF SUR-
GICAL TREATMENT.

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The statement that the last twenty-five years have been characterized by marvellous advances in the treatment of abdominal diseases by surgical means has become a truism. Yet it must be confessed that in microbial infective processes involving the peritoneum scarcely any advance has been made toward arriving at a sure and successful method of treatment.

The words of a well-known English surgeon, Mr. Frederick Treves, are worthy of note in this connection. He states that "surgical treatment has been most discouraging in acute peritonitis following gangrene, operations and puerperal infection. It has met with but little better results in cases of perforation, in which serous inflammation has been well established . . . while the operative treatment of localized suppurative peritonitis has been remarkably successful. In the case of general diffuse non-tubercular peritonitis there is no record to boast of and little progress to chronicle."

Again he states that he is doubtful if a single human life has been saved by surgical interference in a genuine case of peritoneal toxemia (*i.e.*, the condition in which infective changes in the peritoneum are associated with marked toxic absorption). Statistics as to the deadly nature of infective peritonitis, with whatever condition associated, and both in cases which have been treated medically and those which have been subjected to operation, can be readily furnished by authorities in many countries.

The following may be referred to in particular: Treves refers to 100 cases in the London Hospital, of which 70 were fatal.

Kaiser notes 30 cases in which operation was performed for peritonitis following perforation, of which 19 were fatal.

Körte, Mickulicz, and Krönlein have described a number of cases

of purulent peritonitis, 40 in all, in which operation was carried out, of which 29 were fatal; but it must be noted that of the 11 recoveries 7 occurred in cases where the suppuration was localized. Krecke describes 119 cases operated upon, of which 68 died.

Hawkins of St. Thomas' Hospital, London, describes a series of 11 cases of diffuse purulent peritonitis, all of which were fatal.

While the above statements will be generally accepted as regards diffuse peritoneal infection, there will be an equal unanimity of opinion that during the last few years considerable advance has been made in the operative treatment of localized infections, this being very largely due to the work of American surgeons. A careful study of well-prepared statistics from different countries will, however, reveal the fact that even in localized infective suppurative conditions there yet remains a considerable opportunity of diminishing the death-rate in connection with operative procedures.

If, for instance, we take localized inflammations in connection with appendicitis, it will be found that the brilliant results obtained by so many operators have been in cases in which the local conditions have been of a favorable character, but that where infection spreading from the appendix has led to severe localized swellings, associated with suppuration or gangrene, the results have been much less satisfactory. In this relation it is of interest to refer to statistics of operators regarding large numbers of appendicitis cases.

Porter of America gives the following interesting analysis of 448 cases:

Recoveries.....	371.
Deaths.....	77.
Average mortality.....	17.23 per cent.
<i>A. Removal of appendix during attack:</i>	
Recovered.....	122— 80.3 per cent.
Died.....	29— 19.7 per cent.
<i>B. Removal during quiescence:</i>	
Recovered.....	13— 92.86 per cent.
Died.....	1— 7.14 per cent.
<i>C. Incision and drainage of abscess:</i>	
Recovered.....	154— 81.82 per cent.
Died.....	34— 18.18 per cent.
<i>D. Appendicitis without operation:</i>	
Recovered.....	82— 86.32 per cent.
Died.....	13— 13.72 per cent.

Hawkins of St. Thomas' Hospital, London, analyzes 264 cases as follows:

	Deaths.	Recovered.
A. Non-purulent perityphlitis.....	0	190
B. Purulent perityphlitis.....	10	28
C. General peritonitis.....	27	9

Operative treatment in above:

1. Appendix removed once in (A).
2. In (B) Abscess opened and drained in 33 cases.
3. In (C) Abdominal section and flushing in 11 cases. (In 3, appendix removed; all died.)

In all forms of appendicitis treated according to conservative ideas, the mortality was about 14 per cent.

Armstrong of Montreal gives the following statistics collected from three hospitals in that city since 1889, regarding 517 cases of appendicitis, with a mortality of 12.8 per cent. Up to July, 1892, they were mostly in medical wards; since 1892, mostly in surgical wards.

In the Montreal General Hospital, from 1858 to 1873, peritonitis is alone mentioned in the hospital statistics. After 1873 perityphlitis had a mortality of 12 per cent.; peritonitis (so called) a mortality of 40 per cent.

	Deaths.
Total peritonitis and perityphlitis, 1858-1890.....	152
Pericæcal abscess.....	2
Perforation of vermiform appendix.....	1

155

Mortality during this period was thus about 23.8 per cent., or nearly double that in the succeeding six years.

Of the 517 cases, 128 were non-operation cases, with a mortality of 3.12 per cent., the deaths being entered in the records as due to septic peritonitis.

Three hundred and eighty-nine were operation cases, 84 of which were interval cases and 305 were in the acute stage; mortality, 20.65 per cent. (or 63 deaths).

Of these 63 deaths, 36 were in general peritonitis, 2 in tubercular peritonitis and appendicitis, 18 in abscess (localized), 5 in pyelo-phlebitis in mesentery and liver, and 2 in pneumonia.

That the important element in infective peritonitis is microbial activity is now practically everywhere believed, and facts are rapidly accumulating regarding this field of pathology. Various micro-organisms have been found associated with peritonitis, of which the most frequent are the bacterium coli commune, streptococcus, and staphylococcus pyogenes aureus, the most frequent being the first named.

Thus, Fränkel, in 31 cases of peritonitis, found bacterium coli commune in 9, streptococcus in 7, staphylococcus aureus in 1, pneumococcus in 1, and bacterium lactis ærogenes in 2. In 4 cases he could not find any micro-organisms.

Tavel and Lanz found bacterium coli commune alone in 15 cases, in association in 16 cases; streptococcus alone in 3 cases, in association in 15; staphylococcus alone in 2 cases, in association in 6; pneumococcus alone in no case, in association in 2.

Hawkins found in 61 cases of general peritonitis or appendicular abscess due to appendix disease, that the bacterium coli commune was present in 57, in 50 cases being the only germ present. This authority states that in most cases of peritonitis due to intestinal perforation the bacterium coli commune is found usually alone.

The predominance of the bacterium coli commune, not in association with other micro-organisms, is of interest, and the explanation in a number of cases may be understood by Barbacci's experiments on animals. He found that when perforating peritonitis was produced artificially this organism alone survived, even though for a time in the early stages of the inflammation other germs might have developed. (In these cases the bacterium coli was found in different parts of the body, *e.g.*, in the liver, spleen, kidneys, glands, etc.)

In cases of hernia different observers have found bacterium coli commune in the sac, in a large percentage of cases; in internal strangulation in the peritoneal exudation. In the latter condition, produced artificially in dogs, Bönnecken found this organism in most cases; occasionally other germs were found. Then in suppuration and ulceration of the gall-bladder is often found the bacterium coli commune, in many cases by itself.

Staphylococci are rarely found alone in peritonitis; generally with more virulent organisms. In puerperal peritonitis the most frequent organism is streptococcus. In peritonitis following abdominal section, streptococcus, staphylococcus aureus and albus are most commonly found; in some cases the bacterium coli commune is found. The pneumococcus very rarely causes peritonitis; it is hard to produce an infection with it experimentally in animals.

In regard to the bacterium coli commune, Macaigne states that a culture from the healthy gut is harmless in the peritoneal cavity, and that the organism becomes virulent when there is some disturbance in the bowel wall due to such causes as diarrhea, constipation, strangulation, etc.; its virulence is increased, if, along with it, there

be introduced sterilized fluid from the intestines, sterilized water, ox-gall, or blood.

It has also been pointed out by Treves and others that freshly filtered fluid from the bowel, placed in the peritoneum, causes peritonitis, which is usually fatal; in such a case the bacterium coli commune is the infective agent. If the fluid be filtered through plenty of gauze the effects are less severe. If the fluid be sterilized no evil results follow its introduction into the peritoneal cavity.

It is of great importance to bear in mind the variations in virulence of micro-organisms, both in varying conditions in the body, as well as under artificial conditions. Bacterium coli commune, for instance, is found to vary in artificial media, losing its virulence more quickly in agar than in broth. Ekehorn showed that when taken from mild forms of appendicitis it was less virulent than when taken from acute and severe attacks.

In this connection may be noted the observation of Tavel and Lanz, who found this organism in the peritoneal cavity in some cases of localized appendicular abscess, without the presence of any peritonitis; and that of Welsh, who found the organism in the peritoneal cavity in some cases of non-perforating ulcers of the intestine.

Next, attention may be directed to the peritoneum as regards its normal functions, and its reaction to infective irritants. It has been shown by Wegner that the surface area equals that of the skin. There is some doubt as to the presence of stomata between the endothelial cells; Clark, in his recent able work, states that appearances which have been described as stomata are really the retraction of the cells at their junctions. Absorption of fluids from the peritoneal cavity probably takes place both by blood-vessels and lymphatics.

Attention has recently been directed to the following interesting experiments of Muscatello. Fine carmine granules in suspension were injected into the peritoneal cavity of dogs. When the dog was suspended head down:

In five to seven minutes granules were found in the retrosternal lymph-glands even before they were visible in the lymphatics of the diaphragm. There was no trace in the pelvic and abdominal lymphatic glands; at the end of six hours the diaphragm was injected; in one and one-half hours they were found in the glands of the spleen and liver.

Where the dog was suspended with the head up:

After five and one-half hours no carmine was visible to the eye in

any gland. Microscopically, however, it was found in the retrosternal and in the other intrathoracic glands, but not at all in the spleen, liver, pancreas, lumbar, or aortic glands. Muscatello thinks, therefore, that the normal course taken by particles of solid matter in the peritoneal cavity, is first through the diaphragm to the thoracic glands, thence into the blood stream, whence they find their way to the glands in various parts of the body.

The current to the diaphragm exists in spite of gravity, though the latter retards it. He thinks that the diaphragm is the only part of the peritoneum capable of absorbing solids from it, the lymph-glands in the mediastinum being the collecting center. Most granules are carried off by leucocytes which pass into the peritoneal cavity, but it appears that very small particles may pass through the peritoneum without such help.

The peritoneum is normally very sensitive, but the sensitiveness is lost as it becomes altered in inflammatory processes. The following experiments of Reynier and Reichel may here be noted:

1. They poured boiling water or perchlorid of iron into the peritoneal cavity of the rabbit, producing marked shock and death within twenty-four hours.
2. The above experiment, when preceded by a nerve sedative, *e.g.*, chloral, always resulted in the animal living twenty-four hours or more.

The reaction of the peritoneum varies according to different circumstances. I desire to refer only to the following:

(1) Situation:

It has been fairly well established that the small intestine and omentum are most sensitive to infection, as well as to the rapidly spreading variety of peritonitis.

The parietal peritoneum is considerably less sensitive; and the liver peritoneum is not very sensitive.

It is not common to find localized or encysted peritonitis in the area of the small intestine apart from tuberculosis, as Treves points out. The localized forms are found almost entirely in the sub-phrenic region between the diaphragm and transverse colon, in the region of the cecum, especially on its outer side; and in the pelvis.

(2) Influence of micro-organisms:

Variations are produced according to the nature of the organism, according to differences in virulence, according to the quantity introduced, etc. Consequently it is not surprising that we find as a result of microbial infection of the peritoneum widely different clinical

phenomena and pathological changes. Thus, we may find little or no illness resulting, with practically no changes of importance in the peritoneum itself; or, on the other hand, we may find that death quickly occurs, associated with intense toxemia, in the course of a few hours; or between these extremes may be found a series of cases varying both in the symptoms produced and in the changes induced within the body.

Tavel and Lanz have published experiments dealing with the changes produced by differences in dosage. They have shown, for example, how a very slight dose of a given microbe might produce little or no disturbance, while a larger dose produced a chronic peritonitis more or less localized; a still larger dose causing a diffuse inflammation and a fatal end; while a very large dose produced death before any local changes were developed.

The peritoneum is capable of disposing of certain quantities of micro-organisms. Various experiments may be referred to in this connection.

1. Grawitz's:

(a) Non-pyogenic microbes introduced into the peritoneal cavity in large or small quantities cause no harm.

(b) Large quantities of microbes which ordinarily are harmless, may be able to start a severe peritonitis if the absorptive power of the peritoneum be impaired.

(c) In several cases streptococci and staphylococci injected in a watery solution caused no changes.

(d) The introduction of the same quantity with a fluid difficult of absorption led to purulent peritonitis; the same occurred where the peritoneum was injured.

Pawlowsky carried out Grawitz's experiments and obtained similar results.

2. Waterhouse's:

(a) Six c.c. of a cloudy culture of staphylococcus aureus was introduced into the peritoneum of a dog, and death of the animal did not occur.

(b) The same quantity, along with 8 c.c. of urine or blood, did not cause its death.

(c) The same quantity, with 15-20 c.c. of urine or blood, led to severe peritonitis.

(d) Three cm. of the culture, with 3 cm. of blood-clot, caused death in twenty-four hours.

(e) Two c.c. of staphylococci or 1 c.c. of streptococci from an acute abscess led to death in twenty-four hours.

When similar quantities of these cultures referred to were introduced with plenty of water, the animal usually survived; when introduced with turpentine there was no peritonitis, but in cases where the peritoneum was first irritated with turpentine and the microbes then injected, fatal peritonitis then occurred. This authority also found that the presence of ascitic fluid in the peritoneum of the cat favored death after the introduction of the cultures.

Halsted found by experiment that ligature of the omentum followed by the introduction of infective cultures caused peritonitis in every case.

Regarding immunity in the peritoneum, Treves, Melsome, and others, think that a certain degree may be produced in animals, both local and general, against septic infection.

Treves points out that operations in chronic peritonitis, or after repeated subacute attacks, are less risky than in cases where there has been no previous trouble.

NOTE.—The alimentary tract in its whole extent contains all kinds of micro-organisms. It is thought that they are more numerous in the large than in the small intestine. (They appear to be more common in carnivorous and omnivorous animals than in the graminivora.

With reference to the passage of microbes through the alimentary tract and the fate which they accomplish under normal conditions little is known.

It is of interest in this connection to mention Gillespie's experiments. He found that the hydrochloric acid of the stomach is very detrimental to pathogenic organisms. If much food be taken, especially of proteid nature, or if the acid be deficient, there is established the condition favorable to the passage through the stomach of the micro-organisms unhurt.

(To be continued.)

MALIGNANT PLACENTOMA.*

BY JOHN MARSHALL BEFFEL, M.S., M.D.,

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The specimens that I have for demonstration to-night are of more than passing interest, first because of the rarity; second, because of the difficulty of diagnosing and naming the same. I believe this is the first original diagnosis and demonstration in Chicago of a specimen called by various names, as Deciduoma Malignum, Malignant Syncytioma, or Malignant Placentoma, and, unless I am mistaken, it is the second in the United States; the first in this country having been made by Williams of Johns Hopkins University in the fall of 1894.

It is not my purpose at this time to present an exhaustive paper on the subject of placentoma. All I wish to do is to demonstrate the specimens, and thus put the case on record. A more extended paper will be presented later.

The history of the case is as follows:

November 10, 1897, Mrs. Tilly W—, a Swedish woman 30 years of age, was admitted to the service of Dr. E. C. Dudley at St. Luke's Hospital. The following is the history of the case as shown by the hospital records.

Complaint.—(1) Pain over right inguinal region. (2) Pain across lumbar region. (3) Headache. (4) Constipation.

Family History.—Negative.

Personal History.—Patient was married at the age of 22; she has had three children, the first child was delivered by forceps, the youngest child is three years old. In March, 1896, the patient had an abortion; at this time the uterus was curetted, and immediately following the curettement the patient had chills and fever, also hemorrhage from the uterus. This condition lasted for two months when she began to improve, except that her menstrual periods occurred

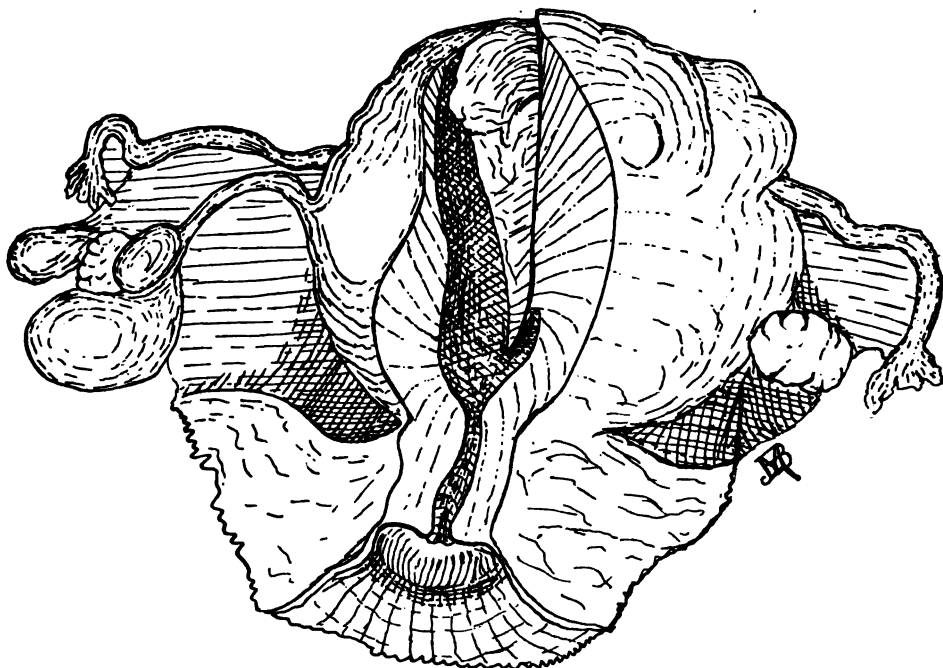
*This is a report of a demonstration before the Chicago Pathological Society, June 13, 1898. The discussion will appear in the Society's report. Since the demonstration specimens have been examined by Drs. Williams and Cullen of Johns Hopkins University. Dr. Williams "has absolutely no hesitation in pronouncing it deciduoma malignum, so-called." Dr. Cullen says, "The secondary nodules in the lungs give unmistakable evidence of syncytium."

every two weeks and she remained in a generally debilitated condition.

Present Illness.—Two days ago (November 8) patient had a chill and sudden pain in the right side which made her so faint and dizzy that she fell down but was not unconscious, she was nauseated and became tympanitic. She had not menstruated regularly since July.

Dr. Dudley found a slight thickening of the right anterior uterine

PLATE I.



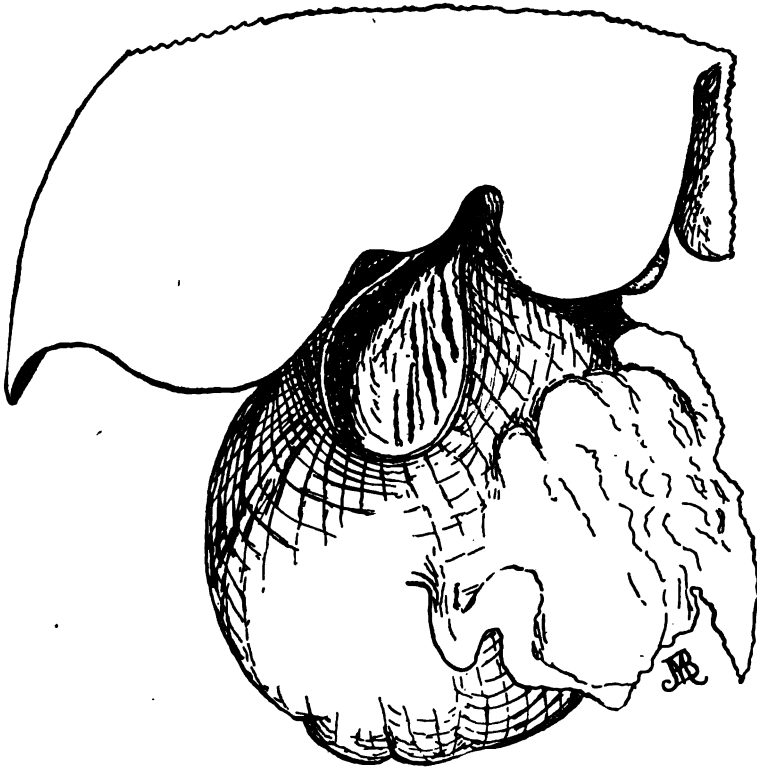
View of tumor in gall-bladder; also, the right lobe of liver with a small tumor of the liver projecting from the under surface.

wall in the region of the right horn, but did not think the case one for operation. The diagnosis was pelvic cellulitis. After three-weeks' residence at the hospital the patient was discharged.

February 9, 1898, the patient came to Dr. T. J. Watkins, who placed her in Provident Hospital. At this time a large tumor was diagnosed in the uterus and one in the region of the right lobe of the liver. February 12th, Dr. W. E. Schroeder performed an exploratory operation, finding a tumor the size of a large orange developing

from the lower wall of the gall-bladder. A tumor of about the same size was found in the region of the right horn of the uterus. A diagnosis of sarcoma of uterus with metastases was made, and the case considered inoperable. A small piece of the tumor of the gall-bladder was removed for purposes of diagnosis, marked hemorrhage followed, and in spite of all attempts to check the hemorrhage by packing, by Paquelin cautery, etc., it continued, and the patient died within twenty-four hours.

PLATE 2.



A posterior view of the uterus, showing tumor and cysts of the left ovary.

The autopsy was performed by Dr. Frank X. Walls, demonstrator of pathology at Northwestern University Medical School, by whose kind permission I was permitted, upon his departure last March for Vienna, to make a study of the specimens, and to demonstrate the same when I made my diagnosis. Dr. Walls found the two tumors above mentioned, besides one small tumor in the lower wall of the

liver, and several small tumors in the superior lobe of the left lung. The kidneys appeared normal, microscopic sections did not reveal tumor tissue. The inguinal glands were normal. The mesenteric veins appeared thrombotic. Pieces were removed, but upon sectioning we found them free of tumor tissue.

The uterus and appendages were removed, as was also the right lobe of the liver, together with the tumor in the wall of the gall-bladder.

Gross Appearance.

The uterus is, as you can see, considerably enlarged (see Plate I.); the left half of the uterus is almost normal, but the right half, both anterior and posterior, is markedly involved; its surface is nodulated, the right tube is almost hid from view by the extension of the tumor between the folds of the broad ligament. On cut section through the posterior wall we observe that the left uterine wall is of about normal thickness, the right wall is considerably thickened. The uterine mucosa is, so far as appearance is concerned, normal, except for an area about one centimeter in diameter lying near the right anterior portion of the fundus. Here the mucous membrane is broken and a mass projects slightly into the uterine cavity. If we continue the incision through the anterior wall we get a section of the tumor which appears red and spongy; it is not tough and fibrous, but rather friable.

The ovaries, so far as the tumor is concerned, appear normal, and microscopic examination of the right ovary shows absence of tumor tissue. The left ovary is cystic. There are three small cysts developing from its surface. They are probably oöphorotic cysts.

The gall-bladder.—Here we find a tumor about the size of a large orange developing in the lower wall of the gall-bladder. When sectioned it presents the same appearance as the uterus, except that this tumor is more friable, crumbling whenever handled.

The liver.—Near the border on the under side, close to the transverse fissure, is a tumor about three centimeters in diameter; it shows the same structure as the other tumors.

The lungs.—Several small tumors were found in the superior lobe of the left lung.

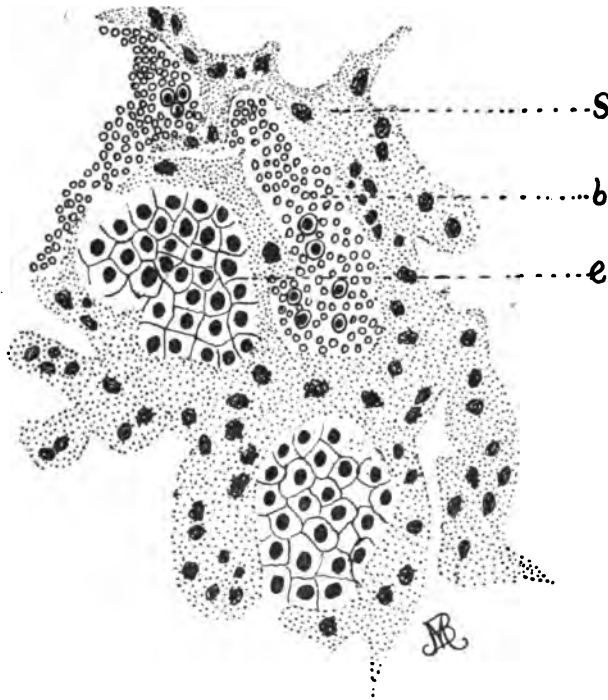
Histological Structure.

I will first describe the tumor in the gall-bladder, as this is least modified by the host.

First.—We observe the great amount of blood in the tumor; it looks in places like a hemorrhagic mass which has undergone partial coagulation and is crossed in all directions by fibrinous bands. In other places it lies in intimate relation with the characteristic cells of the tumor.

Second.—We note the presence in the blood-spaces of peculiar “long, narrow, wormlike bands of protoplasm,” which contain many

PLATE 3.



Drawing of histological section from tumor in the gall-bladder: (*s*) syncytium, (*b*) blood-space, (*e*) ectoblastic cells.

nuclei. The protoplasm of these masses is undivided, there being absolutely no trace of cell division. These syncytial masses present all sorts of fantastic shapes, as you will see by reference to Plate III. The protoplasm has a marked affinity for eosin, which is manifest if we compare its staining qualities with the red blood-corpuscles which have quite an affinity for eosin, the protoplasm being stained much deeper. The nuclei are quite large and irregular. They have

a large amount of chromatin, and take up the hematoxylin stain very deeply. There is another characteristic of the protoplasm, namely, to be vacuolated. These vacuoles are often quite large and are found filled with blood. This may be due to the intimate relation which the syncytium bears to the blood-spaces; one side of the syncytium is always in contact with the blood.

PLATE 4.



Section of large vein in the lung, showing (*s*) syncytial masses embedded in (*c*) a blood-clot.

Thurd.—A reference to Plate III shows another set of cells, grouped irregularly and lying next to the syncytial masses. These cells have large round or oval nuclei which take the hematoxylin stain less readily than the nuclei of the syncytium. The nucleus is large in proportion to the amount of protoplasm. The protoplasm of these cells does not stain as readily with eosin as that of the

syncytial masses. I believe these are epithelial cells. Nowhere is there a connective-tissue stroma.

A section of the tumor in the lung shows a large vein which contains an embolus composed of typical syncytial masses embedded in a mass of fibrin, and lying loose in the lumen of the vessel. This shows beautifully how metastases occurred in this tumor.

A section of the uterus at the point where the tumor invaded the uterine cavity does not give us the typical picture described above; we do, however, find the syncytium in the venous spaces in the muscularis; but nowhere do we find these cells in the muscularis—they are always in blood-spaces.

The large cells which we find in the muscularis, and which take up the eosin stain deeply, are, I believe, degenerate decidual or connective-tissue cells, and are not to be confounded with the syncytium—while these cells are quite numerous, they hardly form an important part of the tumor.

Histogenesis.

1. There can be but little doubt that the tumor we are demonstrating originated in the placenta.
2. The blood-spaces may be a reproduction of the intervillous blood-spaces of the placenta.
3. The syncytium has its origin in the placental syncytial masses. We, of course, cannot at this time go into a discussion of the histogenesis of the syncytium; most of the authorities agree, however, that they arise from the ectoblastic layer of the placenta—although this has not been proved.
4. The large epithelial cells, I believe, have their origin in the ectoblastic cells of the villi of the placenta.

Diagnosis of Specimen.

We will note the following facts:

First.—The development in the uterus of a tumor following an abortion is a suspicious circumstance.

Second.—The history of the rapid development of metastatic tumors in a little over three months show the marked malignancy of the tumor.

Third. The histological structure of syncytium, ectoblastic cells, and blood-spaces, constituting the microscopic symptoms of the

tumor, when combined with the above history, leads us to a diagnosis of malignant placentoma.

Differential Diagnosis.

This specimen has been diagnosed as giant-celled sarcoma. That there are giant cells here there can be no doubt; these are not, however, myeloblastic cells. There were no lesions present in the bones. In myeloid sarcoma we usually have a dense stroma made up of spindle and round cells. There is positively no connective-tissue stroma or matrix in this tumor. The myeloid cells do not, as a rule, branch as do the syncytial masses here. See Plate III.

It has also been diagnosed as angiosarcoma. The presence of large quantities of blood in a tumor does not make it angiomatous. The blood in this tumor is not confined in blood-vessels, but is held in by the syncytial masses, together with the ectoblastic cells forming these blood-spaces. Nowhere do we find these spaces lined by endothelium. We do not have the cells arranged in stratified layers about the blood-vessels as in angiosarcoma.

I think it is not decidua malignum, which is, as its name signifies, a malignant tumor, the main cells of which are the cells of the compacta of the decidua serotina, or the decidual cells. The uterine tumor alone suggests this diagnosis. The cells in the muscularis which appear as decidual cells are not in a state of rapid proliferation, but rather in a degenerating state. The masses of cells lying next the muscularis or in the venous spaces I believe to be the ectoblastic plates described by Siegenbeck Van Heukelom, in the *Archiv für Anatomie und Physiologie* for 1898, in an article on human placentation.

I believe the decidua is not involved in this case. The tumor has been called a carcinoma because it is believed that the syncytium and the ectoblastic cells, or cells of Langhans both have a common origin, namely, the epiblast or outermost layer of the germ-vesicle. If this is the correct histogenesis of these syncytial masses, then this tumor is a carcinoma and not sarcoma. The union of these two forms of cells in the metastatic tumors rather leads us to believe they have common origin.

You can see that the naming of this tumor depends not upon the pathologist, but upon the embryologist. There are four theories for the origin of the syncytium:

1st. From the endothelium of the blood-vessels. 2nd. From the

uterine gland structure. 3rd. From the compacta of the decidua. 4th. At present the most generally accepted theory, the syncytium arises from the ectoblast. But until the embryologist has proved the origin of these masses, I prefer the name malignant placentoma, or malignant syncytioma, although the latter term does not indicate the presence of the blood-spaces or ectoblastic cells.

SOME REMEDIABLE FORMS OF STERILITY.

BY GIDEON C. SEGUR, M.D., HARTFORD.

Without any attempt to review, abstract or epitomize what has been written upon this subject, I will endeavor to present for your discussion a few points that have occurred to me from my own experience. The propagation of the species is probably the strongest of all instincts. Anything which interferes with the consummation of that purpose is not only abnormal, unfortunate and pitiable, resulting in the prevention of natural desires, propensities, and ambitions, but also presents a barrier to the fulfilment of our Creator's first command, "Be fruitful and multiply." There is no greater service that the physician can render to his fellow and his God than in correcting these abnormal conditions which prevent the multiplication of our kind.

Our time will not permit us to consider all the various types of sterility which present themselves for our advice and treatment, but only to pass in brief review a few of those forms which, being more readily or surely relieved, seem to return us the greater rewards for our labors. Success is reassuring; and consequently that work which is the most successful and fruitful in tangible results, is the most interesting, although it may not be the most scientific or skilful.

Causes.

Of the many causes of sterility which might properly be termed remediable, we will at this time take into consideration a few of those which are the most common.

Some of these are slight and seemingly out of all proportion to the effect produced, and yet their removal easily and readily accomplished is followed by a cure of the condition; as in an imperforate hymen or one in which the carunculæ myrtiformes or so

exquisitely sensitive as to prohibit coition; where under local (cocaine) anesthesia, complete dilation by means of graduated sizes of specula, incision first being employed if necessary, will effect a cure.

The entrance to the vagina being pervious and not over-sensitive affords an opportunity to examine the cervix, when a condition similar to the following may be found:

Case 32.—Mrs. N., æt. 32; married two years; upon careful inquiry could elicit no evidences of anything abnormal except a slight dyspepsia. Her menstrual life began at fourteen, recurred regularly, was not very large in amount, continuing three or four days with but slight disturbances. Has some leucorrhœa occasionally. A vaginal examination demonstrates a slightly enlarged cervix, a rather open os containing increased secretions. This slight catarrhal condition of the canal was sufficient to prevent conception. Hot vaginal douches, containing borax, and a regulation of coition were sufficient without further treatment to cure the catarrh and there was then no impediment to conception and her sterility was cured.

A similar condition often occurs where a catarrhal endocervicitis follows miscarriage or parturition as in

Case 126.—Mrs. S., æt. 30; married four and one-half years (March 12, '93); complained of sterility; unable to carry child to term or till viable; has had two miscarriages. The last at about seven months (which lived eight hours) occurred three months ago. While carrying she menstruated regularly. Menstrual life began at fourteen, recurs regularly every four weeks in considerable amount, lasting for four or five days and is not attended with much pain. She has considerable pelvic pain, too free menses and leucorrhœa. Examination showed a hypertrophied and congested posterior lip of the cervix, endocervicitis and retroversion. In this case little attention had been given to the hygiene of the sexual organs. Simple treatment to relieve uterine engorgement (hot douches) with tampons to afford rest and recuperation to the uterine supports and advice concerning times and frequency of copulation and also directions respecting lifting, straining, reaching, etc., when next pregnant, were sufficient to effect a cure. In this case there was a hypertrophied and congested lip of the cervix corresponding to a retroversion which was undoubtedly the first cause of both the cervical conditions as is usually the case where any version or flexion, especially the latter, exists either at the neck or in the body of the womb.

A lacerated cervix will sometimes appear to be the only cause for relative sterility and this condition being corrected, especially if at the time of operation the endometrium is carefully treated by curettment, and appropriate applications of carbolic acid, iodine, perchloride of iron or some other agent, the patient will be restored. In these cases, however, it is probably due more to the catarrhal condition resultant than from the impairment of the integrity of the parts that sterility exists; since we find cases of severe laceration in which there does not seem to be enough of a cervix to retain the products of conception within the uterus that will, after all, repeatedly perform that office adequately and to our great surprise. This brings us to a consideration of these catarrhal conditions of the cervix, body and tubes which lie at the bottom of so many of these unfortunate cases, and many of which do not properly lie within the limits of this discussion because irremediable. Those which are due to anemia or other depraved general conditions may by general hygienic and constitutional means be remedied. Some by topical treatment and sexual rest can be brought to a normal condition and be persuaded to accept the functions which devolve upon them, but others disappoint our prolonged, patient endeavor and refuse to be coaxed, cajoled, led, or driven to perform their share in the process of fecundity.

Erosions of the os may be the cause of a catarrhal endocervicitis which will disappear when the erosions are cured. Fungoid growths not only by themselves, but through their presence causing endometritis may require thorough and radical removal.

Flections of the uterus are a very common cause of sterility; such malposition being a direct cause of diseased conditions which follow the congested state sure to attend upon them; treatment in these cases being especially directed to the reduction of the attendant inflammation, correcting the deformity and thus preventing the congestion which accompanies menstruation and keeping the parturient canal pervious to allow the entrance of the fecundating element. This class of cases is well illustrated by

Case 30, Retroflexion.—Mrs. P., æt. 26, married two years; first seen November 12, 1888, when she complained of frontal headache coming on irregularly and lasting a variable time, always following any extra exertion; suprapubic pain at periods from earliest remembrance, and often accompanied by faintness. Catamenia began at 13; always recurs every four weeks; the amount is considerable, continuing for four or five days and attended with much pain, the

amount of pain corresponding to the time of flowing; never pregnant. Defecation very irregular, requires laxatives most of the time.

Examination shows the uterus somewhat low and enlarged, less mobile than normal, consistency increased, retroverted and retroflexed, the os open and posterior lip eroded.

I treated the erosions and relieved the congestion and inflammation of the uterus by local applications of iodine, boro-glyceride, tampons, hot vaginal douches and attention to the bowels. When the uterus became more mobile, massage, tamponment, and pessaries were used to replace and keep the uterus in position; faradization was employed to improve the tone (vaginal bipolar, vagino and utero-abdominal and bipolar inter-uterine), with satisfactory results. At first the patient was seen every two or three days, later every week, until in September, 1889, nine months after the beginning of her treatment, she had the most comfortable menses in her recollection. The general plan of treatment was continued, a pessary (Emmet's) being worn most of the time until in the summer of 1890 she became pregnant, and in due time was delivered of a strong, healthy boy.

Here was a case of congenital malposition aggravated in symptoms by the exceedingly sensitive nervous organization. Such cases rarely improve if left to themselves, but offer fair hopes of cure under careful, painstaking, persistent, mild measures of treatment.

These cases are scarcely ever simple, but complicated with other lesions, closely or remotely associated. In the following case the attending ovaritis was probably caused by the retroflexion, but added its distinct elements in symptoms which were very annoying as well as painful.

Case 44, Ovaritis and Retroflexion.—Mrs. S., æt. 22; married four months, complains of sacral pains with frontal and occipital headache. Menses began at 19; two years previously had been in poor health and subject to daily attacks of nose-bleed; it recurs every month regularly; is considerable and increasing in amount; for five days usually but recently rather less, about three days, and attended with considerable pain.

Upon examination the left ovary was found to be excruciatingly sensitive; the mobility of the uterus was impaired, sensitiveness and size increased; there was a marked retroflexion and a tense inflamed condition of the cervix, the congested blood-vessels standing out in bold relief. A general tonic treatment with local applications of

iodine, boro-glyceride, tampons and antiseptic (carbolic) douches and suppositories of belladonna and iodoform relieved the ovaritis and congestion of the cervix, resulting in allowing a more natural condition, a comfortable catamenial period and allowed copulation, which before could not be borne on account of pain, and in due time, after a normal pregnancy, she was delivered of a twelve-pound boy. In this case sterility was induced by the hypersensitiveness of the generative organs and the profound disturbance of the entire nervous system, which in turn were undoubtedly due to the retroflexion.

Where displacement has continued for a long time and repeated congestion has influenced an inflammation extending to the per-uterine structures, we have a more complex condition to deal with, and one requiring the utmost patience, perseverance, and concord upon the part of patient and physician, a good illustration of which is found in

Case 249, Retroflexion and Cellulitis.—Mrs. D—, æt. 26; married six months; November 29, 1895, complained of irregular menses (thirty to forty-two days), averaging five weeks lately, and attended with nausea and retching, during the first day. Is a tall brunette, of fair general appearance, bright, quick and alert, nervous when tired and inclined to be morbid. Has strong maternal instincts.

Menses began at fourteen, recur every four and one-half to six weeks, in considerable amount, somewhat clotted and continuing usually seven days. No bad pains but feeling of discomfort during entire period. Has some leucorrhœa. Is constipated, having defecation every two or three days. When twelve years old had a severe fall upon her back. Was a regular "tom-boy."

Examination found Douglas's cul-dé-sac almost filled with exudate, including uterus and both broad ligaments, it being impossible to differentiate the parts bimanually, but by means of a sound the uterus was found to be retroflexed and displaced to the right, the cervix looking backward also, making a quite acute flexion.

Treatment was directed towards the absorption of the inflammatory products and adhesions by means of massage, iodine, ichthyol, boro-glyceride, iatrol; by posture, and tampon, and douches. The hardness was gradually reduced when massage could be used to greater advantage, and with the practice of the genu-pectoral position greatly assisted in rectifying the position and shape, which were retained by means of proper tamponment. Great care had to be ex-

exercised, since there was a manifest tendency to inflammatory action upon the least provocation. Graduated steel dilators were used to assist in overcoming flexure in the canal and to increase the size of the os cervicis. Careful attention was given to the general condition and directions for regular baths, exercise, and the performance of the bodily functions were intelligently followed by the patient, together with appropriate medication at different periods as seemed to be indicated. This course was continued for a year and a half (with steady though slow improvement) when our labors were rewarded by conception, and she is now a happy mother.

The cause of the conditions which existed in this case were undoubtedly due to the fall upon her back when twelve years of age, which produced the backward displacement of the uterus and provoked an inflammation which so seriously involved her chances of fertility. I entered upon the treatment of this case with much trepidation and a rather unfavorable prognosis that with mutually persistent and faithful endeavor, the conditions might be overcome. Her strong desire to become a mother was of the greatest aid in the conduct of her case.

A similar condition in an earlier stage of development showing the marked advantage by early attention in the time required to overcome them is found in

Case 166, Peri-Uterine Cellulitis.—Mrs. F—, æt. 22; married five months; was first seen October 15, 1893, and complained of painful coitus; pains in pelvis, with general weakness, being unable to lift anything; inability to retain semen. Catamenia once at thirteen years, then not at all for two and one-half years; then every five or six months till married, but every four weeks since; amount small, continuing for two days. Has some leucorrhœa, yellow, thick. Examination shows diminished mobility, increased sensitiveness, the uterus being about normal in size, but closely attached to the right side of the pelvis. The cervix appears in speculum from the right side; the os is small and contracted, and the canal has a sharp flexure in which position it is held by adhesions.

Treatment in this case was begun with boric-acid insufflation, glycerine, belladonna and iodoform tampons, and boric-acid douches. This was followed by applications of Churchill's tincture of iodine to vault every three or four days with the same tampons and HgCl₂ douches, using a suppository of aristol (gr. iiij) each night.

Massage as soon as the sensitiveness was relieved resulted in overcoming the adhesions and bringing the uterus into a more nor-

mal position. Graduated steel dilators were then used to dilate the os and straighten the canal. The following month menstruation was more natural, and was the last she had till after her child was born the following summer.

Syphilis.

In so incomplete a paper even as this, one would hardly be justified in omitting to mention *syphilis as a cause of sterility*.

This disease so malignant, and yet so often maligned and used as a cloak to cover inability to correctly diagnose obscure conditions, must be held accountable for a considerable number of cases, and the diagnosis must sometimes at least be arrived at by exclusion. Syphilis differs from those conditions which we have already considered, in that while they are local and largely mechanical, it is general and specific. Its treatment also is medicinal and systemic, and our prognosis may be considered favorable as regards sterility, even in cases of apparently serious import. Of these cases, a large number readily conceive, but seem to be unable to retain the products of conception to the period of viability as in

Case 242, Syphilis.—Mrs. F—, æt. 21; married three years, September 13, 1895; complains of being unable to “carry” to viability; has had three miscarriages, first at six months, second at six months and three weeks, there being no life during last three weeks; third, eight months, no life felt during last week. Has pain in right ileo-inguinal region.

Menses began at twelve, recur every four weeks, about right in quantity, and continue seven or eight days, and are not attended with pain. Feels well and looks strong, is of full habit and is easily excited. Examination reveals no abnormal condition. Her mother has had three miscarriages and fourteen labors; some children died in first week, six now living; youngest has cleft palate.

This history, with the tell-tale Hutchinson's teeth, suggested syphilis as the cause of her trouble. She was placed under continued specific treatment, was advised respecting hygiene, etc., and October 16, 1896, was delivered of a large, strong, healthy-appearing boy.

It is more difficult sometimes to treat successfully these cases and secure the continued cooperation of the patient, because they need not report so frequently and are “only taking medicine.” The best way, it seems to me, is to emphasize the importance of the

treatment to the patient so that she shall thoroughly understand the full significance of any deviation from the prescribed course of procedure, and dispense the remedies yourself, giving only sufficient to last for a stated time, and requiring a return at that time for further directions. In this way, and by varying the form in which the remedy is used, our chances of success are more favorable.

I will not at this time attempt to take up any of the other forms, but in closing remark that, as sterility is a condition rather than a specific disease, and is dependent upon so many different conditions or the proper fulfilment of so many functions, its study embraces all the disorders of these various functions and conditions, and its treatment consists in ascertaining which functions are at fault, in what way they are so, and then correcting those faults and restoring them to their normal conditions. This, as has already been said, may sometimes be easily found and simply remedied, while again the cause may elude the most painstaking care and study, and all efforts to cure be unavailing. There is therefore in its study, an opportunity to concentrate the highest exercise of diagnostic ability, both in a general way respecting the constitutional causes, and also in the more limited field of special application of gynecological knowledge and experience. In fact, as any and every deviation from the normal condition of the sexual organism in women, and to be sure, in man as well, may determine sterility, its study should include the whole art of gynecology and also of the diseases peculiar to men. Under such a broad claim, we would soon find ourselves embracing the entire field of the practice of medicine. But I do not propose to ask you to cover this field with me, but rather to stimulate your endeavor in determining the cause for the small number of children in the families under your care, and to provoke your consideration of the means to be used to correct these causes. For various reasons we find a husband and wife living together a long married life without issue. It matters not whether they are desirous or not of offspring; such a condition strikes us at once as being abnormal, and we instinctively attempt to reason respecting its cause, and if we have the true spirit of the physician, are desirous of rectifying the wrong. If however, our services are not sought with this end in view, we have some delicacy in making any effort in that direction, since individual liberty has obtained so strong a foothold within the popular mind, that we find a great many claiming and endeavoring to substantiate by argument and invective, that each one shall be a law unto himself in these matters, *i. e.*, that each individual husband

and wife shall decide for themselves whether or no they shall have children. Here the treatment is moral, and I believe the physician should take the highest ground that barrenness and unfruitfulness in the highest order of creation is more to be deplored than in any other. In so preaching, however, it is essential, in order that we shall sustain our theories, that we are so prepared to practice our profession, as to overcome as far as possible, all pathological conditions which interfere with fertility and render them physiological.

OVARIOTOMY, OÖPHORECTOMY AND SALPYNGECTOMY
WITHOUT LIGATURE, CLAMP OR CAUTERY,
ETC., FOR OVARIAN CYST, TUBAL
ABSCESS, ETC.; ILLUSTRATIVE
CASES BY BOTH VAGINAL
AND ABDOMINAL
ROUTES.

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The history of ovariotomy in its earlier days is also the history of abdominal surgery. It is interesting and instructive to look back to the early operators and their methods and to trace the several changes that have taken place in the treatment of ovarian cysts, etc. In the comparatively short space of eighty years, methods have been tried, have been found wanting, and in some cases have again come into use in practice, either to be again discarded or to be adopted with perhaps some modifications which render them useful or convenient. To Dr. Ephraim McDowell¹ of Kentucky, undoubtedly belongs the credit of having first deliberately performed ovariotomy. Dr. McDowell tied the pedicle with cord, the ends of which were left long and were brought outside through the abdominal incision. Twelve years later, Dr. Nathan Smith¹ removed an ovarian tumor composed of a thin-walled cyst. Smith, instead of trying the pedicle *en masse*, ligatured two vessels in it with a strip cut from a kid-glove. The abdomen was then closed completely and the patient recovered. The third American surgeon who was successful in removing an ovarian tumor was Dr. Alban Smith¹ of Danville. In 1853 Baker Brown¹ began to operate. He closed the blood-vessels in the pedicle by means of the actual cautery. This appeared to be a step in the right direction as it did not leave a ligature in the ab-

dominal cavity. In 1858, Spencer Wells¹ in his third case fixed the pedicle outside the abdomen by means of a clamp, his idea being that if suppuration took place it would be better outside than in the abdominal cavity. Gradually the plan of ligating the pedicle, using silk or catgut has come again into use, and with it the intraperitoneal method of treating the pedicle. The difficulty was to get a ligature which would not do harm. Byron Robinson² in 1894, suggested that it would probably be better if possible to isolate the arteries and ligate them alone, thus going back to the method of operation used by Dr. Nathan Smith in 1821. Pratt³ of Chicago, about this time wrote up a new method of vaginal hysterectomy, what he called vaginal hysterectomy by enucleation without clamps or ligatures. This method is spoken of by Baldy and Dorland⁴ as nothing more than a revival of Langenbach's operation. However, Edebohl's⁵ in writing up the several methods of vaginal hysterectomy called the enucleation operation Platt's method as he considered it justly bears his name. My earliest paper on enucleation, entitled "The Treatment of Fibro-Myomatous Uteri, requiring Hysterectomy by a Combined Vagino-abdominal Method of Enucleation with the Individual Ligation of Bleeding Vessels Only" was published in the *New York Medical Record*, July 20, 1895. In my article I stated that "the abdominal incision is made to expose the fundus, tubes, and ovaries, etc. By blunt dissection, aided at times by snips from the scissors, you ablate the tubes and ovaries by carrying your dissection as close as possible to these structures. Two principles are involved in the satisfactory performance of enucleation; the first is to dissect, as close as possible to the uterus, tubes and ovaries, bleeding is thus reduced to the minimum as by this means you divide only capillaries or arterioles, the oozing from which stops almost at once; the second is to keep your immediate work well in view, and if any artery be divided to catch it at once with forceps and ligate with catgut ligature." I further stated that "vaginal hysterectomy by enucleation was as a routine practice first done by Pratt, to whom great credit is due and the method justly bears his name."

In 1896 I had opportunities of applying the enucleation method without ligature, clamp, or cautery, etc., in the removal of ovarian cysts, tubo-ovarian abscess, etc., and on December 8, 1896, I presented before the San Francisco County Medical Society, specimens of tubo-ovarian abscess, ovarian cyst and tube removed, without ligature, clamp, or cautery⁶, etc. These were, as far as I can find

out from the study of the literature of the day, the first specimens of ovarian cyst, tubo ovarian abscess, etc., that have been removed without ligature, clamp, or cautery, etc.

Before taking up illustrative cases, I shall run over the several points in technic of enucleation.

Points in Technique.

The abdominal incision required for the removal of an ovarian cyst, etc., need not be longer than three inches, and after opening the peritoneum, if it be found necessary on account of extensive adhesions or the size of the mass to enlarge the incision, this can easily be done. Less time is taken and less injury is done by operating through a short incision, and later on the incision may be closed in less time and with fewer manipulations. In nearly all cases the Trendelenburg position should be used, as it offers many advantages. If adhesions¹ are present separate them by blunt dissection, aided at times when they are firm by cuts with the scalpel; unless they are very old and firm they always give way before the normal structures, but when the adhesions to the intestines are old and firm they should be cut so as to leave a piece attached to the bowel; should the intestines be torn, grasp them at once and close the rent or rents with two layers of continuous seromuscular fine chromicized catgut or silk sutures, using preferably the absorbable suture. Bleeding from adhesions is best arrested by irrigation with hot water and pressure with hot gauze sponges. To prevent secondary adhesions all raw surfaces, where it is possible, should be whipped over with fine continuous catgut sutures. Occasionally sutures cannot be used, and then secondary adhesion can be prevented by means of an aristol film² which acts mechanically and gives the raw surfaces an opportunity to heal separately. The film will not form on the surfaces if the fluids wash away the aristol before it becomes fixed with the lymph; in from half a minute to a minute the film can be formed on a dry surface by exposure in the air. The ovarian cyst or tumor, etc., should be removed without ligature, clamp, or cautery, etc. After all the adhesions are separated the enucleation proper begins. Commence the enucleation at the outer extremity of ovarian cyst or tumor, etc., and work toward the uterus, using blunt dissection, aided at times by cuts with a scalpel, keeping very close to the cyst wall or surface of the tumor; the dissection should be carried as close as possible to the mass

which can thus be removed without cutting a vessel, no matter how large the cyst or tumor may be. In removing the Fallopian tube commence enucleating at the fimbriated extremity, work toward the uterine end of the tube, when the uterine cornu is reached, the serosa of the tube is divided in a circle about one-quarter of an inch from the tubo-uterine junction and dissected back to the uterus; the tube is then cut off flush with the uterus and the cut edges of serous coat which had been dissected back are united with a continuous catgut suture. After the removal of diseased structures, *e.g.*, ovarian cyst, etc., or diseased tube, etc., or both, the cut edges of the broad ligament should be united with continuous catgut sutures. If drainage is necessitated one or more strips of moist gauze, surrounded by gutta-percha tissue with several holes snipped in the tissue (Robt. T. Morris' Capillary Wick) answers well, this I consider the best form of supra-pubic drainage, at the same time the rubber tissue prevents the formation of adhesions between the serosa and the gauze. Vaginal drainage, via an incision through the cul-de-sac is also very valuable, but by employing the wick drain of Morris it makes vaginal incision unnecessary. In an earlier paper on appendicitis⁹ I reported fourteen cases where drainage was necessitated, in which Morris' capillary wick was used with every advantage. In closing the abdominal incision each of the layers should be sutured separately, and thus accurately, with continuous sterilized chromicized tendon or chromicized catgut stitches, using very fine silk for the skin. I am sure that if each of the divided structures, except the fat, is sutured after this method there would never be a post-operative hernia. I advocate the removal of all such masses as ovarian cysts, tumors (non-malignant), abscesses, irreparably diseased tubes, *e.g.*, pub-tubes, tubes the seat of gestation, etc., by enucleation without ligature, clamp, or cautery, etc., as the simplest, safest, and best method of extirpating such masses. Of nineteen specimens of ovarian cysts, etc., tubal abscess, etc., that I have successfully removed by enucleation, there was only one instance wherein an artery bled, was clamped with small forceps and ligated with fine catgut. This was a case in which I removed an irreparably diseased Fallopian tube (left chronic non-purulent salpingitis with extensive adhesions). The tube had been enucleated without any bleeding up to the uterine cornu where it presented an enlargement the size of a hickory-nut. This mass, which at first thought was a small fibroid, but was afterward shown to be a hypertrophied portion of the tube was dissected from the uterine

cornu and removed with the tube. While enucleating the mass a small artery was severed. In this instance, on account of loss of distinct landmarks, I wandered a little in my enucleation. I did not dissect as close as I should have done, but I feel sure that if I had dissected closer not even this small vessel would have been cut.

At times enucleation is somewhat difficult, *e.g.*, when the pedicles are short, deeply located in the pelvis and cannot be easily reached, when the pedicles are thick, very vascular or retract quickly, when the broad ligaments, uterus, etc., are fixed by peri-uterine or other adhesions. Under these circumstances enucleation is facilitated by applying successively long forceps on the pedicles or pedicles, using the forceps as temporary hemostatics, levers, and tractors, while the enucleation is proceeded with. The clamps are, under such circumstances, an addition to the enucleation method.

I avoid the clamp method, mass or serial ligation, etc., as they are open to serious objections. Vital tissues are unnecessarily constructed. In fact, the clamp operation is open to so many objections that it is a thing of the past. Ligation *en masse* requires the employment of non-absorbable or heavy, slow, absorbable ligatures. This frequently gives rise to serious symptoms which are sometimes more distressing than those for which the operation was performed; ligatures are the cause of painful or adherent stumps and adhesions which occasionally give rise to intestinal obstruction. Sometimes the stumps beyond the ligatures slough, producing local or general peritonitis; pelvic exudates form; the ligatures work their way into the bladder, rectum, etc., or to the surface constituting what are called wandering or dead ligatures; minute abscesses and small fistulæ develop, making invalids of the patients for weeks, months, or even years, and at times producing fatal results. Septic conditions are also produced by impure ligatures. Internal hemorrhages occur from slipping or imperfect tying of ligatures. Patients have died from ligatures cutting into the tissues of the pedicles, from the slipping of ligatures or from the too early absorption of catgut or other absorbable materials used. Fistulæ following the use of ligatures may persist for a long time, sometimes secondary operations are necessary to remove them. Even when recovery is afebrile and primary union has taken place, the ligatures at times act as foreign bodies, and later on work their way to the surface or into adjacent viscera, forming slow healing, painful and troublesome sinuses, etc. Abscesses sometimes form around the ligatures, necessitating incision

either supra- or infra-pubically or both. Pecal and other fistulae are not uncommon. I meet with one every once in awhile where ligatures were the cause.

The cautery in treating the pedicle is a little better operation than the ligation method. There are no strings constricting nerves, blood-vessels, and other structures. However, it is also open to many serious objections. Vital tissues are unnecessarily destroyed, cauterization means sloughing, septic discharges, painful and sloughing stumps, pelvic exudates, fistulae, adhesions, etc. Hemorrhages from the stumps are more liable to occur with the cautery than the ligation method, or when the ligation of vessels only method is employed. The cautery operation is also somewhat complex in execution, requires extra assistance and extra instruments, which are additional expenses. The cautery, whether electrical or otherwise, gets out of order so often, frequently just when one wants to use it, beside there are so many unnecessary manipulations. The burning of the pedicle causes severe pain after the operation. Some patients complain very bitterly of the feeling of heat and burning in the abdomen even after the stumps have been well irrigated and every precaution has been taken to prevent burning of the adjacent viscera, skin, etc. Then again, eschars mean sloughing and delayed healing.

The method of ligation of the vessels in the pedicle is also open to many objections. It necessitates the use of non-absorbable or slowly absorbable ligatures, which produce the same conditions but to a less degree to those already described under the ligation *en masse* method, *e.g.*, sepsis, hemorrhages, sloughing, septic discharges, painful and sloughing stumps, pelvic exudates, fistulae, adhesions, wandering or dead ligatures, etc. The operation is also by no means bloodless, and the surgeon may be called back to arrest bleeding. In fact, I consider that as soon as enucleation without ligature, clamp, or cautery, etc., becomes well known, all other methods will be things of the past, as they are unsurgical and have no place in the clean, careful work of the present day.

By enucleation without ligature, clamp, or cautery, you cure the patients. There is no continuance of symptoms or the development of others, the work is clean, simple, and safe, there is no danger of bleeding for no vessels are cut, convalescence is rapid, very few instruments and fewer assistants are required, there is no sloughing, fistulae, cautery, or ligatures, etc., to give rise to trouble. In fact, enucleation has the advantages of all the other methods, with

none of their disadvantages, and having many additional advantages, and fulfilling all the indications, is followed by the best results. The length of confinement to bed is reduced to the minimum number of days, as healing is quickest because the wounds are in a healthy condition. There are no disturbances of the bowels or bladder, etc., little or no trouble after the operations, as the wounds are aseptically sealed, and no raw surfaces exposed to form adhesions. There are no recurrences and no secondary operations. In regard to enucleation as described, I can state positively that there is no danger from hemorrhage, either primary or secondary. If the enucleation is not properly done, a blood vessel may be cut, but there is no danger from the bleeding as the artery is small, can be caught at once, and ligated with very fine catgut. However, it must not be forgotten that deaths from hemorrhage have followed the ligature, the clamp, the cautery, and the ligation of vessels in the pedicle methods, same as other fatal results following surgical operations in careless or incompetent hands. If men will remove ovarian cysts, etc., without arresting bleeding, if any should occur, these patients will die, but if enucleation is properly done the operation is perfectly safe, as safe as any other operation in surgery.

I report fully the histories, etc., of four cases taken from my series of enucleations. Any more to explain the points of the operation are unnecessary. The histories of several are as instructive as a million, as the technic is the same in all cases.

Case I.—Mrs. R. C——, aged 40, the mother of two living children; had always enjoyed good health up to a few years ago, when she began to run down; lost some flesh; became somewhat anemic and inclined to be nervous; the bowels became constipated; the patient commenced to have considerable vaginal discharge, and later on pain in the lower part of the abdomen. While under the care of one physician she was given the rest cure, massage, etc. This treatment was continued for a week or so, when she would no longer remain in bed. She went along, complaining mainly of nervousness, with at times pains over the heart; constipation, for which she took freely aromatic cascara sagrada; a continuous vaginal discharge, and occasionally pains in the lower part of the abdomen. She had two attacks of peritonitis, but was frequently confined to bed for a day or so. Occasionally she had slight chills and fever. A few months ago she noticed a swelling in the left side of the lower part of the abdomen. She consulted Dr. G. Gross, who made a diagnosis of pyosalpinx, and advised that an operation be performed.

Examination showed the uterus in normal position and moderately movable. A mass, tender to the touch, occupied the left side of the pelvis and extended to the side of the uterus. The right tube and ovary could not be thoroughly examined. Some thickening was felt, and slight pain on pressure.

On November 11, 1896, with the valuable assistance of Dr. G. Gross and Dr. O. Parrone, I made operation. Chloroform was administered by the drop method.

Examination under chloroform showed the uterus in normal position; on the left side was a large adherent mass, extending to the uterine cornu; the right ovary was enlarged to the size of a mandarin orange, and moderately adherent.

Diagnosis.—Endometritis, left pyosalpinx with adhesions, right ovary enlarged and moderately adherent. The patient was placed in the lithotomy position; the cervix was dilated and the uterus curetted. Carbolic acid and tincture of iodine, one in four, were applied to the endometrium. The cervix was again dilated and the uterus irrigated with boiled water. She was then placed on the back with the legs extended, and an incision about three inches long made above the pubes, dividing slightly to one side of the median line the skin, the subcutaneous tissues, the fascia, the rectus and the peritoneum. On the introduction of two fingers, the omentum and intestines were found adherent to the appendages and the fundus. On account of the extent of the adhesions and the size of the masses it was found necessary to enlarge the incision slightly. Three and three-fourths inches was the length of the entire incision. The fundus uteri could not be felt at first, so the adhesions on the left side were separated with the fingers till the mass on this side could be partially felt. Carefully working toward the fundus, separating the adherent omentum and intestines, after awhile I exposed the fundus. The left mass was enucleated, beginning at its outer extremity. During the separation of adhesions it ruptured, and about one-half pint of creamy chocolate-colored fluid escaped. Pitcherful after pitcherful of hot water was poured in, till the fluid came away clear. The blunt dissection, aided at times by cuts from the scalpel, was carried as close as possible to the adherent mass (a tubo-ovarian abscess). The enucleation was continued as far inward as the cornua of the uterus, from which the mass was separated by dissection flush with the uterus. The pedicle was not tied or clamped, as there was no bleeding vessel. The adhesions behind the uterus were separated, except deep down in the pelvis. The right ovary was next sought

for, and was found adherent; the tube was apparently normal. The ovary—of the size of a mandarin orange—was separated from the adhesions and the surroundings, and with the tube was enucleated by blunt dissection, aided at times by cuts with the scalpel. When the uterine end of the tube was reached the serosa of the tube, about one-fourth of an inch from the uterine cornu, was divided in a circle and dissected back to the uterus. The tube was then cut off at the tubo-uterine junction, and the cut edges of serosa which have been dissected back were united with a continuous catgut suture. The oozing from the adhesions was arrested by irrigation with hot water and sponge pressure. A couple of tears on the uterine fundus were closed with continuous catgut sutures. Two narrow gauze wicks were carried down to the cul-de-sac, and the ends brought out through the lower angle of the wound. The omentum was drawn down and spread over the intestine, and then the cut edges of the peritoneum were united with a continuous fine chromicized catgut suture. The divided rectus and fascia were united with a continuous chromicized tendon suture, and for the fine approximation of the edges of the fascia a layer of fine chromicized catgut was also introduced. The skin edges were sutured with fine silk. Only sufficient room was left at the lower angle for the passage of the gauze wicks. The uterus was not removed, as it was in good position and had been curetted.

Dressing and After-treatment.—Moist bichloride-of-mercury gauze, held in place by long strips of adhesive plaster, cotton, and binder. The moist dressings were changed as often as they were saturated—about every three hours for the first few dressings, every four hours on the first day, every six hours on the second, and twice on the third. The gauze wicks were shortened on the third day. The remaining portions of the wicks, except a short piece, were removed on the fourth; and on the morning of the fifth a piece was withdrawn, when a narrow strip of moist gauze was introduced, and the edges of the small wound were allowed to fall together. Recovery was satisfactory, the wound healed by primary union, and the silk stitches were removed on the seventh day.

Mrs. C.'s general condition is good, looks well, feels well. She has no symptoms referable to the pelvis, except at times some adhesion pains, which are not severe. She has sometimes vertigo and flushings, etc., symptoms which frequently follow double salpingo-oophorectomy. If it had been possible I would have saved the ovary, the seat of the ovarian cyst, but it was so generally adherent

and completely destroyed that resection and plastic operative work could not be practised.

Case II.—Chronic endometritis, hyperplasia uteri, ovarian cyst, parovarian cyst, double salpingo-oophoritis with adhesions.

Mrs. T. (Dr. T.'s wife); age, 36 years; weight, 195 pounds. Enjoyed good health until 1880, when she had puerperal fever following a delivery complicated by adherent placenta. The fever kept her in bed six weeks. During this pregnancy she menstruated every month. When she was 27 years old she had peritonitis and some brain trauma as results of injuries. She recovered after being in bed eleven months. Had peritonitis four times since, one attack being complicated with brain fever. After this attack her blonde hair became dark; had also deafness in the left ear. In 1886 she developed an umbilical hernia, which has caused at times considerable distress. At present a mass of omentum, the size of a hen's egg or larger, is adherent at ring, and is readily palpated, painful and tender to the touch. She has always complained of pain at times, very severe in the pelvic region. Any great mental or physical effort would aggravate her troubles, and bring on hysterical convulsions. She again married in January, 1896, and in July she considered herself pregnant. Her entire body was larger, milk in the breasts, menstruation irregular, about every two or three weeks; felt fetal-like movements. During the last three months had labor-like pains; breathing became difficult; could not rest on her left side on account of pain. Appetite good, bowels regular, but always considerable pain in the abdomen, before and with evacuation; straining with urination, which was also frequent. Analysis of the urine showed reaction, alkaline, specific gravity about 1010, phosphates and mucus. Grs. x doses of benzoic acid corrected the alkalinity. She has been confined to the bed most of the time for several months. I was first called to see her April 5, 1897, to examine as to the presence or absence of pregnancy. As she was very fat, and as a satisfactory examination could not be made on account also of the pain in the abdomen and pelvis and the rhythmical spasms of the abdominal muscles, I had chloroform administered by the drop method. I found endometritis, uterus in normal position, and moderately movable, an adherent mass, the size of a large cocoanut, occupied the right side of the pelvis, extending to the uterine cornu; the left tube was enlarged to twice its normal size, and the ovary was adherent.

On April 12, 1897, I operated, assisted by Drs. Gross and Boyes.

Chloroform was administered by Dr. Selling by the drop method. The patient was first placed in the lithotomy position. Cervix dilated, uterus curetted and irrigated. The legs were then extended, and an incision, about three inches long, made above the pubes, dividing the skin, the very thick subcutaneous layer of adipose tissue, the fascia, and the peritoneum. The omentum, which contained a large quantity of fat, was torn through. She was now placed in the Trendelenburg position, and pelvis examined. On account of the inability to reach the adherent mass on the right side with my fingers, I found it necessary to enlarge the incision slightly. The entire length of the incision was now three and one-half inches. The mass was situated behind, and adherent to, the broad ligament. The adhesions were separated with the fingers until the mass could be partially outlined. During the separation of adhesions the cyst, which was thin-walled, ruptured, and a large quantity of blood-stained fluid escaped. Pitcherful after pitcherful of hot water was at once poured into the abdominal cavity until the fluid came away clear. The cyst was, as far as possible, drawn to the surface with long forceps, and the rest of the adhesions were separated. Then, beginning at its outer extremity and working toward the uterus, using blunt dissection, aided at times by cuts with the scalpel, keeping very close to the cyst-wall, the latter was enucleated. The Fallopian tube was embedded in the mass, and was also removed by enucleation, which was carried as far inward as the cornu of the uterus from which the mass and the tube were removed by dissection flush with the uterus. No clamp or ligature, etc., was applied, as there was no bleeding. The cut edges at the cornu of the uterus were united with a continuous suture of fine chromicized catgut. The cyst had been adherent to the right ureter, from which it was carefully separated. No injury was done to the ureter. Further examination revealed a parovarian cyst, the size of a walnut. This was skinned out without being ruptured. The left tube was the seat of chronic non-purulent salpingitis, with adhesions, and the ovary was partially embedded in adhesions, which were to a portion of large intestine. The ovary and tube were separated from the adhesions, and were also removed by enucleation. The tube at the uterine cornu presented an enlargement, the size of a hickory-nut. This mass, which I at first thought was a small fibroid, but was afterward shown to be a hypertrophied portion of the tube, was enucleated from the uterine cornu, and removed with the tube. While enucleating the mass a small artery was severed; it was

clamped and ligated separately with fine catgut. This was the only vessel that bled and required ligating during the operation. The cut edges of the uterine cornu were united with a continuous catgut suture. The oozing was arrested by hot-water irrigation and sponge-pressure. The uterus was not removed, as it was in good position and had been curetted. On account of the extensive adhesions, the history of several attacks of peritonitis, the cyst rupturing, the character of the fluid contents, and the amount of oozing which was present, I used drainage by two narrow capillary gauze wicks, which was carried down to the bottom of the pelvis, the other ends of the gauze strips were brought out on the surface at the lower angle of the incision. The omentum was spread over the intestines; the wound was closed in separate layers with continuous sutures, using fine chromicized catgut for the peritoneum, chromicized tendon for the fascia, and fine silk for the skin. Only sufficient room was left at the lower angle of the wound for the passage of the gauze strips. The patient made an uninterrupted recovery; the wound healed by primary union. The dressings were changed about every two hours during the first twenty-four hours, on account of the excessive oozing of blood-stained fluid; every four hours on the second day; every six hours on the third day; after that, three times a day until April 17th, when one gauze strip was removed. On the following day the other strip was removed, when a narrow strip was introduced and wound allowed to heal. The gauze strips did their work well; did not cause any peritoneal or other irritation; were easily removed, and after their removal such a small opening was left that the layers of the abdominal wall fell accurately together and united about as well as if they had been sutured. Hernia, under most circumstances, will not develop after the use of such narrow strips of gauze used for drainage. The silk stitches were removed on the eighth day. Patient was up and around May 10th.

Mrs. T's general condition is good. She looks well, feels well. She has no pain or other symptoms referable to the pelvis, except at times distressing adhesion pains from the umbilical hernia which I shall operate later on. She has sometimes vertigo and flushing, etc. I could not save either of the appendages as they were both totally destroyed. In July, 1897, she had an attack of right renal colic, and on the third day afterward she passed during urination a calculus size of a large pea; since then she has had two attacks of renal pain, but none recently.

Case III Diagnosis.—Chronic endometritis, hyperplasia uteri,

double chronic salpingo-oophoritis with adhesions, retroversion uterus with adhesions.

Mrs. J. K., age 34 years, enjoyed good health until she was married. First child born when she was 19 years old, second when 25, third, still-born, when 30. First confinement difficult and prolonged, instruments were used after she had been in labor three days. Since that time she has complained of pelvic symptoms, *e. g.*, vaginal discharge, ovarian pain, backache, painful menstruation, frequent micturition, headache, etc. She was very sick with each pregnancy which kept her in bed during her entire time. She suffered extremely from vomiting, at times ejecting blood. So that at full term she was very emaciated. After confinements she picked up quickly, and soon acquired fairly good health. Pelvic symptoms continued during these years. A number of years ago she was operated upon at Peoria, Ill., uterus was curetted, and some other operative work also performed. She cannot explain as she has not sufficient data. In February, 1896, she had a miscarriage at three months, and was quite weak from hemorrhages and septic infection. On February 18, 1896, the uterus was curetted and irrigated, after which she made a slow, but uneventful recovery. Since the miscarriage her symptoms have been aggravated. She complained of headaches, vertigo, nervousness, painful menstruation, excessive vaginal discharge, ovarian pains, and backache.

Examination.—Showed endometritis, retroversion with adhesions.

On September 19, 1897, I made operation, assisted by Dr. Geo. Gross. Chloroform was administered by the drop method. The patient was first placed in the lithotomy position. Cervix was dilated, uterus curetted, and irrigated. The vagina was then packed full of gauze, which was used to push the uterus and adnexa up as high as possible. Next the legs were extended, and an incision about two and one-half inches long was made above the pubes, dividing slightly to the right of the median line the skin, subcutaneous tissues, fascia, rectus-muscle (right), and the peritoneum. She was now placed in the Trendelenburg position, and pelvis examined. It seemed to me that by pushing up the uterus, etc., from below by the gauze packed in vagina, the steps of the abdominal work were made easier than in my previous operations. The fundus was found retroverted and slightly adhered. Both ovaries and tubes were bound down freely by adhesions. As the tubes appeared to be irreparably damaged the adnexa were extirpated by enucleation. No ligature was applied as there was no bleeding. The tubes were

removed flush with the uterus. The cut edges of the broad ligaments, and the cornua of the uterus were sutured with continuous fine catgut. The uterus was brought forward to the normal position and anterior hysterorrhaphy performed. The sutures, interrupted, three in number, and of chromicized tendon, were inserted through the peritoneum and the fascia of the abdominal wall about one-quarter of an inch from their cut edges, the needles taking a liberal bite of the peritoneal and muscular layers of the anterior surface of the uterus. The pelvic cavity was sponged dry as possible, and the incision closed in separate layers with continuous sutures using fine chromicized catgut for the peritoneum, chromicized tendon in two layers for the muscle and fascia, and fine silk for the skin. After completion of work, the gauze packing in the vagina was removed. Recovery uninterrupted, healing by primary union, silk stitches were removed on the eighth day. She was up and around the third week after the operation.

Mrs. K's condition is good, has no pain or other symptoms referable to the pelvis. Hysterectomy should have been performed in this case. This was not done as she did not give her consent, so I had to do the next best thing, anterior hysterorrhaphy which appears to be very satisfactory. Her general condition is good. She complains infrequently of vertigo, flushing, etc. At times the symptoms are quite taxing. I believe¹⁹ that where it is possible we should avoid removing any portion of ovarian tissue that appears normal even though the portion remaining be small, as resection and plastic operations should be practised when pregnancy is liable to occur and delivery at term can be conducted with safety. We should endeavor to cure our patients without depriving them of their menstrual function, as sometimes the symptoms which follow double salpyngo-oophorectomy are more taxing than those which were present before the operation was performed.

During December, 1897, and January, 1898, Mrs. K. was given ovarine (Ex. ovaries, preparation of Armour.) gr. v, t.i.d. She thought the vertigo and flushings, etc., were not as frequent during the early part of December, '97, but after awhile the spells were just the same as before.

Case IV.—Illustrates the steps of enucleation without ligature, etc., by the vaginal route.

Diagnosis.—Endometritis, ruptured pyosalpinx, pelvic hematocoele, retroversion of uterus, bilateral salpingo-oophoritis, pelvo-abdominal peritonitis with extensive adhesions.

Treatment.—No anesthetic given. Dilating, curetting uterus; vaginal incision, via posterior cul-de-sac, separation of adhesions, evacuation of blood and pus; bilateral salpingo-oophorectomy by enucleation without ligature, etc., through cul-de-sac incision.

Mrs. E., age 35 years; general health always fairly good up to a year or two ago. In 1893 she had a miscarriage at five months. For several years has had a vaginal discharge, more recently complained of backache, pains in the pelvis and painful defecation. She attended to her household and other duties till the middle of May, 1898, when she began to complain of chills, feverishness, headaches, loss of appetite, constipation, general weakness, nervous symptoms and severe pain in the back and pelvis. During the last of May and the first few days in June symptoms became aggravated, when she had to go to bed. She would scream frequently from severity of pains. On June 1, 1898, she felt a sudden severe tearing pain in the pelvis as though something ruptured. This was followed by collapse. Dr. George Gross was called in June 2nd and made a diagnosis of abscess with probable rupture. He ordered hot applications and anodynes, and advised operation at once. I saw her with Dr. Gross, June 3rd, at 10 A.M. She was in a critical condition, pulse 120, some vomiting, abdomen tympanitic, bowels constipated, no movement for three days. She had been and was screaming about all the time from the pains. Examination showed the uterus retroverted and adherent, a large, extremely hard, tender and painful mass the size of a fetal head occupied the pelvis, extending up behind and on both sides of the cervix and backward, so that it encroached markedly on the rectum, so much so that with one finger in the rectum, the latter appeared to be about occluded. Fluctuation could not be made out as abdominal muscle was tense, and mass was tender and hard. I ordered calomel $\frac{1}{4}$ -grain doses every hour for six doses, and enema of soap-suds containing oil and Rochelle salts, which was to be repeated if necessary. Hot bichloride douches, 1 in 2000 solution were also ordered to be given every hour till we made preparations for operation. Two enemas were given with a long rectal tube, with not the least result. I saw her again at 3 P.M. I had a colleague give another enema which was repeated within a few minutes. The fourth produced a free evacuation of fecal matter. This relieved her very much, although she continued to scream from the pain. Examination at 4 P.M. showed that she was quite weak, temperature 102 (mouth temp.), pulse 135, abdomen still very tympanitic, mass, etc.,

in the cul-de-sac same as before. As she was in a weak and deplorable condition, I decided not to use an anesthetic. She was placed in the lithotomy position (Glover's crutch), perineum shaved and vagina, etc., disinfected. Perineal and lateral retractors were introduced. I attempted to draw the uterus down with double tenaculum as it was high up but I did not succeed as it was firmly fixed. Cervix was steadied, dilated, uterus curetted and irrigated with 1 in 4000 bichloride solution. An incision was then made with a scalpel posterior to the cervix at the cervico-vaginal fold through the vaginal wall close to the cervix. The tissues were freed with the finger from the posterior aspect of cervix and posterior surface of the uterus. Keeping close to the uterus the cul-de-sac was soon torn through with the index-finger. The opening was enlarged laterally by tearing with the index-fingers. The adhesions present were extensive, some were old and firm, others recent and yielding. They were separated in all directions. While I was working below, Dr. Gross made very strong pressure with the hands above the pubes. I kept as close as I could to the uterus during separation of adhesions, in order not to lose the landmarks. After separating freely as high as the finger could reach, I suddenly entered the hemocele and about $\frac{3}{4}$ of a pint of hot dark-colored fluid blood escaped. Now by making very firm traction on the cervix the uterus could be drawn down somewhat. Continuing separation of adhesions higher up, three collections of pus were evacuated. Altogether about $\frac{5}{8}$ v or vi escaped. Most came from the left side of the pelvis. The cavity was irrigated freely with hot bichloride solution 1 in 4000 and dried with sponges. Adhesions in the region of left tube and ovary were next separated, The left tube, which was about the size of a sausage, was removed with the left ovary; the latter was so adherent that it was removed in pieces. The right tube and ovary were next removed. The tube as large as one's thumb was the seat of a chronic hypertrophic salpingitis, while the ovary was extensively bound down and adherent. These structures were removed in pieces on account of their friability and extensive adhesions, etc. The left tube near its fimbriated extremity showed on inspection a rent that communicated with the interior of the tube which contained a cavity. This had been the original seat of the pus collection. The largest collection of pus was in immediate relation with the ruptured tube, while the other two pockets of pus had formed at some distance, owing to leakage from the rupture aided by gravitation and isolation by fresh adhesions. The collection of blood was due to the rupture

of tubal abscess. The tubes and ovaries were removed by enucleation without ligature, etc., using blunt dissection. No vessel was clamped as there was no bleeding during the entire operation. The uterus was not removed as the patient was very weak, besides it appeared to me that the greater portion of the general peritoneal cavity was walled off by adhesions, whereas, if vaginal hysterectomy had been performed, uninfected peritonem would have been opened and the general cavity exposed to sepsis. The adhesions high up beyond the reach of the hand and fingers were not separated. All ragged pieces, adhesions, etc., were trimmed away as far as possible. The pelvis was freely flushed with 1 in 5000 bichloride solution, dried and lightly packed with a couple of long narrow gauze strips of moist, sterilized gauze. Another long strip was packed lightly in vagina. Vulvar pad applied and the patient put to bed. Several hypodermics of strychnia, whiskey, etc., were administered during the operation. Afterward she was given a couple of hypodermics of morphia. All precautions were taken to combat shock. I saw her at 10 P.M., she was very weak, pulse 145, temp. 101½ (mouth), abdomen tympanitic, had vomited considerable for three hours after operation. She was freely stimulated for several days with whiskey, wine, caffeine, strychnia, etc. She remained weak, restless, tossing, and somewhat delirious through the night, the following day and night. Soon as vomiting ceased she was given every hour by mouth in addition to stimulants, some milk and lime-water, beef-tea, etc., in small but increasing quantities.

From June 6th to 10th she would take but little nourishment voluntarily. Forced feeding was employed, so that she took daily one to two quarts of milk or other fluid nourishment. June 7th she appeared quite conscious but depressed.

The vulvar pad was changed as often as it became saturated, usually every three hours for the first couple of days, afterward three times a day. The vaginal gauze was changed daily. The strips in pelvis were drawn down several inches each day, the excess cut off, vagina, etc., freely cleansed with 1 in 2000 bichloride solution and fresh borated gauze packing lightly packed in vagina. On June 7th, one of the pelvic gauze strips was completely removed. On the 10th, the remaining piece of the other strip was also withdrawn and cavity cleansed and a narrow strip of sterilized gauze introduced into cul-de-sac for a short distance. Temperature was normal for the first time June 15, '98.

The dressings were changed daily. Cavity is filling up gradually.

A catheter was not used after the operation as the urine was voided voluntarily. On June 3, '98, she was given calomel $\frac{1}{4}$ -gr. every half hour for eight doses. Bowels moved freely once, markedly reducing tympanites. After this a cathartic was given as required. From June 10th, there was nothing special. Recovery was uninterrupted. This is a very recent case, and the past operative history is necessarily incomplete, but it is reported as it demonstrates that salpingo-oophorectomy by enucleation without ligature, etc., can be performed through a vaginal incision.

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EDITORIAL.

A WAR LESSON CONTINUED.

In the last issue of THE JOURNAL we discussed the timely topic of the serious death-rate from disease and privation in our volunteer army and the question of medical responsibility therefor. Our much-esteemed contemporary, *The Philadelphia Medical Journal*, has taken us to task for our conclusions on this subject in the following words: "The logic of our usually accurate and acute contemporary seems to us faulty and his premises not the result of precise observation." We are always glad of honest and sincere criticism but we wish our critic had read our editorial once more and carefully before he criticised. We laid the responsibility for the starvation and want of proper attention, from which so many sick soldiers have died, at the door of our volunteer surgeons and the causes of this condition we asserted were partly *incompetence*, partly *indifference* and partly *servility*. In spite of the statement of our contemporary, our observation has been not only "precise" but to a considerable extent personal. Therefore, we did not leave it to be inferred that any one or all three of these qualities were universal among our surgeons, or that all were to be found in the same individual, but we do know and repeat that these negative qualities existed throughout our volunteer forces to a sufficient extent to block in many cases the earnest efforts of many whose untrammelled work would have produced a very different result. Our own high rank in the medical department of the National Guard of the State of New York has

given us not only opportunity for accurate personal observation but for reliable and extensive information from medical men directly at the front or in the great camps both in the regular and volunteer divisions of the service. With the advantage of our special knowledge, therefore, we cannot refrain from the conclusion that our critic in *The Philadelphia Medical Journal* himself wrote from hasty, prejudged and jejune knowledge of the situation. He missed, also, very distinctly the salient point in our charges against the surgeons in our volunteer army. Having come officially into personal contact with most of the surgeons in the volunteer forces from New York State, who were formerly officers in the medical department of the State Militia, and knowing very well how high among them was the standard of medical and surgical knowledge, and being willing to believe that, in this respect, the medical officers of the National Guard from other States were equally competent, we had no desire to apply, nor did we apply, the term *incompetent* to their professional knowledge. For, although there were some appointments made through "political jobbery" of surgeons unworthy the title of doctor of medicine, these were not numerous enough to effect the deplorable health-condition of our volunteer troops. It is not as medical men, physicians and surgeons, that the medical department was incompetent but as *military* surgeons, in the full significance of that term. It is the least part of a military surgeon's duty to know when to amputate and when not to do so or how to treat with drugs the various diseases of camp or field life he must also know how to prevent the epidemic onset of disease among large bodies of men. Not only must he know how to do this but he *must do it*. If a chief surgeon does not recognize the unhygienic conditions of a camp or if, when recognized (in a war like this where money was ready to flow like water), he does not have these conditions altered; if in preparation for the field he does not satisfy himself beforehand that sufficient supplies of drugs and surgical appliances as well as proper food for the possible sick have been issued and accompany his command, he is not only *incompetent* but *indifferent*. It should not weigh with a surgeon, in his determination, that he is opposed by his commanding officer or the heads of other departments. If he is competent he will get what is necessary for the preservation of the health and lives of those committed to his charge, whatever the cost to himself. We make the deliberate statement that, in our opinion, it is the duty of a surgeon, in an extreme case, when he finds his recommendations

not endorsed and all efforts blocked by a quartermaster or a commissary, immediately to resign on the explicit ground that "he is unable to perform his duty owing to the opposition of his superior officer" and thus court a court-martial. Had this been done in but a few instances, we would have escaped the graveyard service of El Siboney and Santiago and have been spared the horrors of our transport ships, while Camps Alger, Thomas, Wykoff and others would not have furnished the everlasting reproach that so many stalwart, healthy sons found death in the arms and on the bosom of the Mother to whose call they had so gallantly and so unselfishly responded.

At least in one instance which has come directly to our knowledge, in which a Division surgeon had made a report animadverting upon the sanitary condition of the men in his charge and calling specific attention to the prevalent ill-health, he was persuaded by his commanding officer to consent to its retention upon the express ground that "if you insist upon this report being forwarded to Washington, this Division will not be ordered to the front." We have been made to believe on credible authority that such instances of yielding to the personal wishes or demands of commanding officers or, as it is doubtlessly more euphonically expressed, "the exigencies of the occasion" were by no means either singular or isolated in the campaign now ended. Perhaps our critic will now understand what we meant by "the *servility* of surgeons to their commanding officers."

As another instance of the incompetence and indifference of surgeons, to which we have alluded, the following comes to our notice as we write:

GENERAL WOOD STOPPED A TRANSPORT.

He Held the Minnewaska till She Was in Proper Shape to Carry Sick Men.

[Special Cable Despatch to *The Sun*.]

SANTIAGO DE CUBA, September 29, 1898.

The sailing of the transport Minnewaska yesterday with forty sick men of the Fifth Army Corps and volunteer regiments was prevented by General Wood, who made a personal inspection of the vessel and found that she was unprepared for the trip. Three of the military officers aboard of her were nearly dead. There were no nurses aboard, and the supply of food and medicines was inadequate. Not the slightest preparation had been made for the comfort of the sick men.

General Wood scored the officers whose duty it was to prepare the ship for the trip north. In his report to General Lawton on the subject, General Wood said that great loss of life would undoubtedly have resulted if the Minnewaska had

sailed in the condition in which he found her, and for this condition of affairs the officers charged with preparing the ship were directly responsible.

General Wood, who is a physician, personally superintended the work of placing the steamer in proper condition for the conveyance of the sick, and she sailed this evening. General Wood will endeavor hereafter to inspect personally all vessels sailing from Santiago with sick soldiers aboard.

Whose duty was it if not a surgeon's to see that the *Minnewaska* was fully equipped with all things necessary for the health of its passengers? And why was it necessary that the Military Governor of Santiago Province himself, General Wood, should personally inspect that vessel? And if General Wood had not been himself a physician, and therefore adventitiously able to recognize the deficiencies on that transport, who would have been responsible, at least morally, for the undoubted loss of life?

Of course, it is the system which is to blame—it is the system which encourages “incompetence, indifference and servility.” Until the system be radically changed, until the Medical Department in our army be made independent of any other department, until the army surgeon be made the sole authority upon everything relating directly or indirectly to the health and lives of soldiers not actually in the face of the enemy, until, in other words, surgeons take their commands directly from the Surgeon-General and he in turn is answerable only to the Secretary of War himself, the military surgeon must remain the scapegoat not only for his own sins but for all others which can effectually be charged to him.

CORRESPONDENCE.

OÖPHORECTOMY IN AN INFANT ELEVEN WEEKS OLD.

LOS ANGELES, August 15, 1895.

To the Editor of the American Gynæcological and Obstetrical Journal:

SIR: Baby Helen R., aged eleven weeks, was referred to me by Dr. Fallansbee. The child had been delicate since birth; bottle-fed; had suffered with indigestion and constipation, cried a good deal. When about two months old a right inguinal hernia appeared. This the parents were able to reduce till December 19, 1897, when it became strangulated. I first saw the child the next day. At this time it was not possible to reduce the hernia under chloroform. I therefore opened the canal, and, much to my surprise, found it contained an enlarged cystic ovary and the Fallopian tube. The ovary was about the size of an adult ovary. I removed the ovary and tube and closed the wound after Macewen's method.

The child made a very rapid recovery. The wound healed by first intention. The child has been very much improved in health since the operation. An oöphorectomy in an infant but eleven weeks only and weighing only eight and a half pounds makes this an unique case.

W. W. BECKETT.

SOME LEADING EUROPEAN GYNÆCOLOGISTS.

BERLIN, August, 1898.

To the Editor of the American Gynæcological and Obstetrical Journal:

SIR: This letter will give a short description of what I saw at Leipsic and Brussels, and will conclude my series of three articles on the above topic.

Sanger of Leipsic is a man of about forty-five years of age, and like all the great men I have seen over here is a tremendous worker. Although he is a titular professor of the University he has no beds at the public hospital, but he invited me to his private hospital, No. 24 Koenig Strasse, where he has twenty-five beds and attends rich and poor alike. He told me that he had had no deaths there since seven months, during which time he had performed 220 operations, 70 of them being laparotomies, either vaginal or abdominal. He attributes

his success to his very rigorous asepsis, he and all his nurses and assistants preparing their hands for twenty minutes before the operation. Since ten years he has been using coarse sand and soft soap for his hands, followed by alcohol and then sublimate water. He uses nothing but silk, which is prepared as follows: First it is boiled in 1-100 of washing soda to remove the dirt and then in Bergman's solution, namely 10 of sublimate, 200 of alcohol, and 800 of water. It is then wound on little pieces of wood on which the size is marked and kept in sublimate alcohol. The patient is always shaved the day before and her skin is prepared with soap and water, ether and alcohol and sublimate. The preparation of the patient occupied three quarters of an hour. The assistant in charge of ligatures burned them instead of cutting them. The first operation was for the removal of a four-pound fibroid by abdominal hysterectomy. He removed it with clamps very quickly and then tied each artery separately with No. 6 silk. He only crosses his first knot once. His hæmostasis is very perfect and he keeps on tying until the wound is absolutely dry. His method of sewing up the abdominal wound is peculiar; he passes silk sutures on two needles from within every centimeter apart, including the whole abdominal wall but only the very edge of the skin. Before tying them he put in another row of interrupted No. 3 silk sutures, so as to bring the fascia and muscles together exactly, and these remain permanently. Between the through-and-through stitches he placed superficial silk ones every half-centimeter so that they were very close together. The wound was then covered with a light strip of iodoform gauze and covered with a large strip of plaster very carefully sealed. Next day he did a precisely similar operation. He takes about one hundred minutes to do the operation, being the most careful man I have yet seen. Ether was the anæsthetic used and the inhaler was a large wire mask covered with rubber, completely covering the face so that a comparatively small quantity was employed. As the patient was only 26 years of age, he left one ovary and tube in the peritonæal cavity, so as to prevent her from having the nerve storms of the artificial menopause. The third morning he removed a hernial sac from the left inguinal canal, which contained a rudimentary uterus, a tumor of the right tube and ovary and a rudimentary left tube. This was a very rare case, there being only a few on record. The fourth morning he performed implantation of the ureter into the bladder. I was fortunate in seeing this operation, as this was only the third time that it has been done in Germany, once by Wurtzel and once

by another operator whose name I forget, although it has been done in America several times, I think by Boldt of New York. On opening the abdomen he found that she had closed tubes and that one ovary contained a large cyst. He cut out the cyst and left the rest of the ovary, after carefully sewing up the flaps with fine interrupted silk ligatures. He opened up the closed tubes by cutting off the fimbriæ and sewing the mucous to the peritonæal edge, so as to make a new pavillion. The patient, who was a young woman, had had a very severe first confinement, during which the uterus and ureter were torn across, and when they healed there was a utero-ureteral fistula and her urine poured constantly from the cervical canal. Sanger began by cutting the ureter off level with the uterus after putting a temporary ligature on it. He then sewed up the hole in the uterus, after which he dissected out the ureter from its original home beside the iliac artery until he had it free to a distance of six inches. He then closed the long opening in the peritonæum, after which he threaded the ureter attached to a bodkin so to speak, between the peritonæum and the abdominal wall into the top of the bladder where he carefully stitched it. I have since heard that the operation was a perfect success. I was perfectly delighted with the four mornings I spent with Sanger, and I have no hesitation in classing him among the world's gynæcologists of the first rank.

Zweifel of Leipzig is the *geheimrath* or chief professor of gynæcology and has a large number of beds in the public hospital for women, which is a large and beautiful building. He is about sixty-five years of age. I saw him perform a very difficult operation for vesico-vaginal fistula in a woman who had had hysterectomy several years before in another city. As the day was dark he used a very nice electric head-light supplied from the street current. The nurses did all the shaving and scrubbing in the operating-room while the assistants were getting ready. As it was high up he had the greatest difficulty in paring the edges, and in passing the ligatures and then he found that in paring the fistula he had opened into the peritonæal cavity. He at once, without rising from his seat, made a nine-inch incision in the abdomen and, instead of using Trendelenburg's posture to get the intestines out of the way, an assistant took the bowels out of the abdomen and held them back so as to give him room, and in this he had great difficulty. As Leipzig is Trendelenburg's town, I was surprised to see any one in Leipzig open the abdomen with the patient horizontal. He finally succeeded in closing the fistula so that it stood the test, that the bladder being distended with water

none escaped either into the peritonæum or into the vagina. He closed the abdominal incision with one layer of catgut for the peritonæum, a second for the fascia and a third for the skin, with a sort of sewing-machine lock stitch, with two needles, which I had never seen elsewhere, and which made a very fine union of the skin. His assistant then operated on a ventral hernia which had followed laparotomy. As he did not employ Trendelenburg's position he had a good deal of difficulty in keeping the bowels in. I saw a very interesting operation performed by Dr. Georgi, Trendelenburg's assistant. It was a colotomy for cancer of the rectum and uterus and, instead of opening the colon in the inguinal region, he made a median incision near the epigastrium and drew the transverse colon out two or three inches and sewed it there. Then he made another incision two or three inches to the left of the first, but only through the skin. The loop of intestine was passed under the skin and brought out of the second incision and carefully stitched there. The first incision was carefully closed and sealed with collodion, after which the bowel was opened at the second incision and the mucous membrane sewed to the skin, when the pent-up fæces poured out. By this ingenious operation invented by Winzel and Van Hocker of Innsbruck, perfect control of the artificial anus is obtained, simply by pressing a pad over the colon as it passes under the skin, and the patient can have one or two evacuations a day.

Trendelenburg of Leipsic.—Although not a gynæcologist, yet he has next to Lister done more for gynæcological surgery than any other man living, and I made him a visit especially to tell him that we thought of him and thanked him every time we did an abdominal hysterectomy or other piece of difficult pelvic surgery. Those of my readers who have never seen a bad pair of pus-tubes removed in the præ-Trendelenburg days can have no idea of the misery which the operator endured nor of the danger to which the patient was exposed. As the work was all done in the dark the intestines were often torn or infected without our knowing it, or some little artery would be steadily pumping into the peritonæum without being seen. Now all that is changed; the intestines are out of the way and we cover them with sterilized towels, and we have a large, well-lighted space to work in so that we tie every oozing point until the peritonæum is perfectly dry and clean. As I did not see any nice table there it would be quite appropriate if the abdominal surgeons of America were to present him with a solid silver Trendelenburg table. I attended one of his clinics at which there were over a hundred stu-

dents present, and it was easy to see how much he was beloved by them. He is a man of over fifty, but of exceedingly modest appearance and, as he called batches of students down to the arena to examine the patients who were wheeled in, he gave each one the marks he had earned.

Jacobs of Brussels, although only thirty-five years of age, has by his enormous industry reached one of the highest positions in Europe. I am told that he is not connected with the University, the position of professor of gynæcology there being held by a military surgeon; nor has he any beds at any of the public hospitals of Brussels; but he has forty-five beds at his own private hospital, which is the most beautiful I have yet seen either in Europe or America, its cost being over a hundred thousand dollars. The nurses are Catholic sisters. He has opened the abdomen by the vagina, mostly for hysterectomy, seven hundred times with a death-rate of less than two per cent., and he has performed over one hundred abdominal laparotomies for removal of the uterus and appendages with less than two per cent. of deaths. His method of disinfection is peculiarly his own, so I will describe it: First, he scrubs the patient with green soap dissolved in alcohol and shaves her himself. If the operation is a vaginal one then he uses a sponge on a holder to scrub the vagina. The field of operation is then scrubbed with equal parts of saturated solution of carbonate of ammonia and bichlorate of soda. He then scrubs with alcohol, then with two per cent. of formaline. The first morning he did a perinæorrhaphy, taking a great deal of time to it, but doing it beautifully, using black silk for most of the stitches, only three of them being of silk-worm gut. The stitches were only one-eighth of an inch apart. He then sealed the wound with alternate layers of iodoform and collodion, so that it was quite air- and water-proof. He obtained his silk from a Bordeaux chemist already sterilized, wound on glass tubes and enclosed in other tubes sealed with a rubber band. The Bordeaux firm buys it from a Philadelphia firm, which in turn buys it from an English firm, which in turn obtains it from China. He has also the daintiest operating-room I have ever seen, all the tables being of polished brass and plate-glass. Next day he removed the uterus, tube and ovaries by the abdomen for double pyosalpinx, an ovarian cyst and a fibroid tumor. One peculiarity about his method is that he cuts first and ties only the vessels which spurt as he goes along, his object being to put four or six ligatures at the most on the isolated arteries and not on the nerves. And this reminds me of his answer to the important question which

was the main object of my visit to Brussels. Why, I asked, did he abandon vaginal hysterectomy with clamps in which he had become so wonderfully successful? Because, he said, with the clamps you compress the nerves and cause the woman so much suffering for two days that it takes her two weeks to get over it, while if you tie only the arteries and close up the peritonæum she will be practically well the next day. In this case as the tubes were adherent to the whole anterior surface of the rectum he carefully detached them with scissors until he had entirely freed the two large tubes as thick as sausages. He then removed them in one piece with the uterus at the level of the internal os, cauterized the cervical canal and sewed the two flaps of the cervix together. The denuded rectum was cleverly covered by sewing the anterior flap to it. He had the fewest assistants I have yet seen, one of them being dispensed with by using an abdominal speculum or retractor at the lower end of the incision, and this was held tightly drawn down by having a chain and a weight attached to it, and he did not have any side holders. In closing the abdomen he used thin, buried silk-worm gut for the peritonæum and fascia, and larger ones for the fat and skin, and he dressed it with plain dry sterilized gauze; but this was covered most thoroughly with diachylon plaster, several layers, each piece overlapping the other. He was very careful and took nearly two hours to the operation, chloroform being used; he tells me that he considers half an hour more of no consequence compared with the importance of thorough hæmostasis. Like Sanger, he brings the skin sutures very near the edge of the womb.

Next day he removed an ovary and tube from a young woman, although he told me that his experience with conservative surgery was far from satisfactory. In cases in which he had cut out the half of one ovary they had suffered for many years afterward from cicatricial contraction in the portion that was left; while in cases in which he had removed the uterus for fibroid, leaving the ovaries, the latter had within two years completely atrophied. Moreover, he says, that since we had ovarian extract at our command, we no longer have anything to fear from the artificial menopause. To every woman in whom this occurs he gives extract of cow's ovaries every morning in a glass of port wine which makes it so palatable that they do not know they are taking it. He says he has even cured insanity with it. The next day he removed tubes and ovaries from a woman whose peritonæum was covered with auxiliary tubercles which he said he had several times seen cured by laparotomy. He

allows his patients to eat heartily the day before the operation but not for several days after; he does not fear distention of the bowels, which he says always means sepsis. He never gives strychnin but gives them plenty of morphin if they are in pain. He thinks that the high death-rate of certain celebrated operators is due to their working at such great speed that rigorous asepsis is impossible. Next day he removed a cancerous uterus by the abdomen, first getting rid of the appendages and fundus down to internal os. He then split the cervix down the middle so as to get his left forefinger into the vagina, previously stuffed with sublimate gauze, rendering the removal of the cervix very easy, as he had only to cut it all around as it lay on his finger, at the same time feeling if the vagina was infiltrated. He also feels if there are infected glands in the broad ligament and removes them. In all his work Jacobs is an artist, using his knife like a paint brush, while in his plastic work one would think he was sketching with a pencil. I had the pleasure of spending an evening with him at his palatial residence, 53 Boulevard Waterloo, full of rare works of art, and was astonished to see him and one of his assistants sit down at two pianos and play Wagner's most difficult pieces at sight, while another sang. This concludes my series of three articles, and I trust that my effort to share the priceless privilege I have enjoyed of seeing these great men at work will be appreciated by those who cannot get away and who must see these things through the eyes of others.

A. LAPHORN SMITH, B.A., M.D., M.R.C.S. Eng.
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REVIEWS.

Schenk's Theory. The Determination of Sex. By DR. LEOPOLD SCHENK, Professor at the Imp. and Royal University and Director of the Embryological Institute in Vienna. Authorized edition. The Werner Co., New York.

To those of us in the medical profession who have met Dr. Schenk the news which we gleaned from the published advertisements, that he had written and launched a book on his pet theory and favorite hobby, the Determination of Sex, was somewhat of a surprise. Indeed, the suspicion at first crossed my mind that the book was a hoax, gotten out for the benefit and deception of the public. As the subject intensely interested the laity the book would doubtless be bought and read by them in large numbers.

But upon perusal of even the first pages I detect the unmistakable ear-marks of Dr. Schenk's peculiar diction and there is now no doubt in my mind that the book is his own work.

But what occasioned the appearance of the book at this time is a mystery that Dr. Schenk alone can clear. His original intention was, as he plainly stated to me last winter when I saw him, that he would divulge the results of his experiments and reveal his secrets only after he had pursued his researches still further, and that then he would make public his discoveries through the scientific societies to which he belonged.

Perhaps a flattering and liberal offer from an American publishing house has more potency than the unreinunerative honor and laudation of a medical society to a man not over blessed with this world's goods.

The book is a neat 12mo. production of 222 pages—no illustrations. In the preface Dr. Schenk does not explain why he wrote the book now, before his experiments were completed, any more than by saying his desire is to stimulate others to wider observation. He scornfully alludes to those would-be scientists who are "inexperienced and lazy," and who like to launch their views without the trouble of research. "They believe or they disbelieve; and they like to have their say. Any one can in this way easily win himself a place among those who have written on a topic."

The first chapter is devoted to a discussion of all the theories on

the origin of sex from the ages of myth and fable up to date. Some of these theories must have seemed very plausible at the time they were advanced. For instance, it was once thought that the right testicle and right ovary produced boys, and the left girls. At another time the difference of age in the parents was held to account for the sex—an older father producing boys, an older mother producing girls. The climate was once supposed to modify the sex of offspring, more boys being born in cold countries and more girls in warm. In this connection, C. F. Vilson, a traveler in Africa, observed that among the warlike tribes of that country more girls were produced than boys. Taking the fact that in these countries the women were held inferior to the men, and, therefore, worse nourished, harder worked and more exhausted, he deduced the theory that the worse-fed parent perpetuates its own sex.

From this statement of Vilson's grew the theory of the "cross-heredity of sex," which seems to be supported or at least not denied by Dr. Schenk. It is discussed at great length and from its handling bears the stamp of importance. It may be tersely stated thus: The sexually superior parent begets the opposite sex. Thus, suppose the wife is comparatively physically stronger and healthier, better nourished and more ardent in the conjugal embraces, her offspring will be boys; and vice-versa.

Another theory upon which great stress is laid is Thury's. His doctrine is as follows: The determination of sex depends upon the ripeness of the ovum at the time it is fertilized. If the ripeness is advanced a male will result, otherwise a female. Thury made many experiments on animals, basing his observations on the phenomenon of rutting.

Thury's theory and the theory of the cross-heredity of sex are shown to be not only reconcilable but agreeable.

Thus are these theories discussed pro and con through 120 pages when one is startled to come upon Chapter III. There is no Chapter II. It has evidently been lost in voluminous Chapter I.

Chapter III. discusses the observations of different men regarding the nourishment of parents, human and otherwise, in respect to their offspring.

Toward the middle of the chapter attention is turned abruptly from the ingesta to the egesta. The excretions are considered, and more especially the urine.

The significance of sugar in the urine is most carefully shown and all the tests for its presence compared. Of all the methods extant

Dr. Schenk places most reliance on the comparatively new phenyl-hydroxine test. This test detects the most minute quantities of sugar in the urine.

Taking as an hypothesis that the presence of sugar in the urine is an indication of faulty metabolism—an imperfect combustion—it follows that the individual thus secreting sugar in the urine becomes physically weaker, more poorly nourished than would otherwise be the case. If the theory of the cross-heredity of sex be true, then the woman with sugar in her urine becoming physically inferior to the man begets female offspring.

Thury's theory is reconciled to the "sugar theory" in the following manner: "Ovulation is never in any case altogether independent of the influences of diet and metabolism." Where imperfect combustion is present the ovum is never so highly developed as where no sugar is found in the urine.

"In the first case we shall have not only a less ripe ovum, but very likely also a less well-nourished ovum. An ovum of this sort has not so fully attained to all the characteristics and powers inherent in its protoplasm and in consequence seems fitted to develop only a female individual. In such an ovum the several cell-products of the ovum which have to develop themselves into the future embryo will be arranged for the growth of a female. Not only will female organs of generation be developed from it but also all the elements of the future individual will be feminine."

Thus, according to Thury's theory, a woman with sugar in her urine will produce females on account of the unripe state of her ova at the time of fertilization.

With these two theories back of him Dr. Schenk began his observations and experiments. He looked around for women who had borne a succession of girls and examined their urine and in all cases found sugar. His next move was to treat these women on diabetic principles and to see if they then would bear boys, and again in nearly all cases he was successful. This, in a nutshell, is the whole of the Schenk theory. By his treatment he puts a woman in a superior physical condition to her husband and in consequence of the law of the cross-heredity of sex she begets a boy.

The reverse of this does not hold true. On page 206 Dr. Schenk says in italics: "The wish to have female progeny is a desire for the gratification of which it is not at present possible to give any directions."

VICTOR NEESEN.

Diseases of Women. A Manual of Gynæcology Designed Especially for the Use of Students and General Practitioners. By F. H. DAVENPORT, A.B., M.D. Third edition. Lea Brothers & Co., Publishers, Philadelphia & New York.

The object of the present volume seems to be to fill the "gap" between the lectures delivered to students and the books designed for specialists. The author aims to present to students, with considerable detail, the elementary principles of the methods of diagnosis and simple forms of treatment and to help the general practitioner to treat the gynæcological cases that come in his every-day work.

The prominence and space that is given to the discussion of the local treatment of gynæcological cases and to the proper use of the pessary is highly commendable. In the majority of text-books these subjects are touched upon so lightly and such prominence given to operative technique that the inexperienced reader receives the impression that with few exceptions every gynæcological case is an operative one. The truth is that local medication always will hold a prominent place in gynæcology and much benefit may be derived from a pessary if its use is understood. Many believe that more harm has been done by injudicious operations during the wave of operative enthusiasm that has passed over the profession than was done by former neglect and ultra conservatism.

This book could not be nor does it pretend to be an operative guide; therefore, if its treatment of non-operative gynæcology could be incorporated with a regular text-book the volume would be more complete and valuable.

That the work should have reached a third edition is proof that its merits have been appreciated.

X. Y. Z.

TRANSACTIONS OF THE AMERICAN GYNÆCOLOGICAL SOCIETY.

May 24, 1898 (*Excerpt*).*A Further Report upon Conservative Surgery of the Uterine Appendages.*

BY A. PALMER DUDLEY, M.D., OF NEW YORK.

(See page 297.)

DISCUSSION.

Dr. HOWARD A. KELLY of Baltimore: It would be well if all papers were as conservative as those of Dr. Dudley (and Dr. Bovée). I look upon conservatism as the saving of any organ which may become active, and whose function is important. If we remove the Fallopian tubes, we sacrifice the possibility of pregnancy but retain the function of menstruation. If we remove the ovaries, we sacrifice its valuable secretion, and if we remove the uterus we sacrifice menstruation. We should always make an effort to save the tube or some portion of it so that the theoretical hope of pregnancy may be retained for the sake of the patient's happiness. We often sacrifice the tube during an operation, because it is easier to pull it up and cut it off than to leave it. Ovaries, too, are often needlessly sacrificed. There is a great deal of talk about chronic ovaritis, but there is nothing in it, for it is a condition which is extremely rare. In most cases of so-called chronic ovaritis, the ovary is simply atrophied because it has been bound down by adhesions. When we take out the fibroid uterus, it is a mistake to remove the ovaries also. It is my habit to leave them, and I have kept a careful history of my cases and find that the patients are free from the disagreeable sequelæ which usually follow removal of the appendages—menstruation was in abeyance but that was all. The following facts should be borne in mind: (1) If the Fallopian tubes are removed, conception is sacrificed; (2) if the uterus is removed, menstruation is sacrificed; (3) if the ovaries are removed, their secretion is sacrificed. When the ovaries are removed, the uterus should always be saved, for the pa-

tient will then be free from the unpleasant symptoms which arise when everything is taken out.

To show the possibility of employing conservatism in extreme cases, I will cite one example. Some time ago I was called to see a patient, and found her in a typhoid state, with a muttering delirium, and the pelvis choked with an inflammatory mass. I opened the abdomen and found everything agglutinated to the tube. I punctured and drained through the vaginal vault, and the patient made a complete recovery. Absolutely no trace of disease remained in the pelvis. The patient menstruated normally and feels perfectly well.

Again, the wife of a physician once consulted me. I operated and found on the right side a little, withered, wiry tube closed at the extremity; the ovary was normal. On the left side the tube was normal, but the ovary was converted into a mere shell and contained absolutely no ovarian tissue. I removed this ovary and the opposite tube. Within a year the woman conceived. The pregnancy proved to be extra-uterine and I was obliged to remove the remaining tube, but the patient still has one ovary and still menstruates.

There is also an age limit in these cases. Where the patient is beyond the child-bearing age—or over forty—there is not so much necessity for conservative treatment, especially in cases of dermoid cysts. But in younger patients, I believe in carrying conservatism to the point of excising portions of a diseased ovary and saving the remainder. Cases of carcinoma and papilloma of the ovary are, of course, excluded from this method of treatment. In these cases it is a mistake to practice conservatism, for the ovary of the opposite side is liable to become affected. In other cases, whenever possible, it is best to be conservative in treating these structures. I do not think many operators would express their preference for the radical operation if we were talking of orchidectomy instead of oöphorectomy.

Dr. W. GILL WYLIE of New York: Nowadays I doubt if any one would seriously object to being called conservative. Many mistakes have been made and are being made every day—mistakes which cannot be remedied. I believe in conservatism and have always believed in it, although at one time I had the reputation of being the reverse. One reason why I have such a low death-rate among my laparotomy cases is because, when I am obliged to remove the ovaries, I leave the uterus. I consider it extremely important that this organ be left in the pelvis. Then, again, we are not opening the abdomen as often as was formerly done. We all know that in many cases this was done needlessly. It is still done to an enormous extent by what

I might call "late" operators—young men or men who have taken up surgery late in life. In New York our friends, the homœopaths, are the chief offenders, and I have seen a number of cases operated upon by them in which removal of the appendages was not indicated by the symptoms or history. One of the worst mistakes which can be made is that of operating when operation is unnecessary. I do not, however, believe that conservative treatment will cure a case of pyosalpinx in which active suppuration has taken place, nor can I believe that such patients are likely to become pregnant if portions of the ovaries and tubes are left.

In regard to doing conservative work in cases in which the life of the patient is threatened, many are saved by opening the abdomen, breaking up adhesions, and draining through the vaginal vault, *if seen sufficiently early*. When the inflammation is localized, mere incision of the vaginal vault, cleansing of the pelvic cavity and keeping it clean, will be sufficient to effect a cure. Many patients bear children after being thus treated.

In doing conservative work in the pelvis, a mistake is often made in overlooking the condition of the uterus. In some cases it is so diseased that nothing short of its removal will cure the patient. This is especially true in chronic gonorrhœal endometritis in young women, associated with small fibroids or fibroid degeneration. Nothing will give a good result but complete extirpation of the uterus. As to leaving the ovaries when the tubes and uterus are removed, I have tried this with very satisfactory results. As a rule, no trouble followed, but in a few cases cysts of the ovary formed and set up symptoms. I have not employed it sufficiently often to form a positive opinion in regard to it. I do not want to say that the results were good, simply because the patients recovered. Time must elapse and the cases studied before these important points can be settled.

As to the treatment of uterine fibroids, I do not think operation is indicated if they do not give trouble and if the patient is young. These cases should be watched. If a fibroid causes hæmorrhage, the uterus should be curetted. Women with fibroids often bear children without any trouble. In cases of large fibroid, I would do myomec-tomy. I see fully one hundred of these cases yearly, but most of the patients are in a condition in which no interference is indicated. Later on some inflammatory process may develop or degenerative change take place which will make the removal of the tumor necessary. I do not look upon fibroids as simple, innocent growths. On the contrary, I think they should be closely watched. But future

results must decide whether we should accept all the rules which are being laid down at the present time.

Dr. E. W. CUSHING of Boston: Conservative treatment in diseases of women seems to be based upon two premises, both of which are incorrect. In the first place, it is taken for granted that all women desire to bear children, which is by no means always the case. Secondly, it is taken for granted that removal of the uterus and appendages impairs a woman's sexual nature, which is untrue. Very few women wish to have children if this will make another operation necessary. The principal thing which they want is their health. If the question is laid before them, most of them will prefer to have everything removed. Removal of the uterus and appendages makes no difference in a woman's sexual feeling, and, even if it did, the woman should be allowed some voice in the matter. Nor is it fair to compare oöphorectomy with orchidectomy because the results are not the same. The sexual feeling and desire which men have and cherish are not particularly cherished by women. To many sexual desire is a trouble, and, as to child bearing, they consider it a curse and a burden which has been laid upon them.

Dr. MATTHEW D. MANN: I have always been an advocate of conservative surgery. Not the least of my reasons for being in favor of conservatism in the surgery of the pelvic organs is the fact that, when these organs are retained, many of the nervous symptoms which follow total removal of the appendages do not make their appearance. The symptoms of the menopause are always exaggerated when the latter has been artificially produced. If an ovary or a portion of an ovary be left, menstruation will probably continue in a young patient and the unpleasant symptoms will be warded off. The results reported of the use of ovarian extract in these cases show that the ovary has some influence upon the organism which we do not yet understand.

I shall continue to do conservative work because I have done it in the past with satisfactory results. My patients have been restored to health and some have conceived after operation. I am of the opinion that more importance should be given to the nervous symptoms which invariably develop after complete removal of the tubes and ovaries.

Dr. J. WESLEY BOVÉE of Washington: I wish to congratulate Dr. Dudley upon the work which he has been doing. I have done some in the same line myself. There is one suggestion, however, which I would like to make, *i.e.*, the advisability of making the vaginal

puncture from above instead of from below. In this way the finger in the vagina may be used as a guide. With a little practice it can be easily done.

Dr. DUDLEY, in closing: I will confine my remarks to one or two points. First, my principal object in presenting the paper was to drive away a certain dread which most gynæcologists have in regard to gonorrhœal infection in women, and to show that these patients can be cured by conservative treatment. In this Society, for years, gonorrhœa has been a bugbear, it being considered only a little less dangerous than septic infection. As a matter of fact, we all know that the life of the gonococcus is limited, to a certain extent, and that it is the result of the poison which keeps up the disease. I no longer consider gonorrhœal infection in a woman as hopeless. In the near future, I intend to try to surround a gonorrhœal infection of the tube and later on open it.

When I operate I pay little attention to the menstrual period, and in those cases in which I have operated during a period, I have always found bloody serum in the pelvic cavity. This I think is due to leakage from the ovisac. I can, therefore, easily see how conception may take place, as in Dr. Kelly's case, when there is a tube on one side and an ovary on the other. I often treat cystic ovaries by puncturing the cyst, or excising the cystic portion, closing the wound thus made with very fine silk. The uterus is always curetted and washed out prior to opening the abdomen. If the uterus has a tendency to drop back in the pelvis, I fasten it up by shortening the round ligaments within the abdomen. I often do this operation at the Harlem Hospital where there is but one operating-room into which all cases, accident and otherwise, are brought. Hot water and clean hands are all that I want, and I have had very good results. I select my cases, and do not recommend this treatment for all. Since 1887 I have operated in this way upon 103 cases and I have waited until now to report them in the hope that if they remained uncured, drifted away from me and were operated upon radically by some of my friends, I would hear of it.

I am glad to hear Dr. Kelly and Dr. Mann emphasize the importance of the reflex condition which follows the removal of the appendages, and which is especially noticeable in young married women. They invariably return to the surgeon complaining of many symptoms. It is much better to be conservative, even if we do occasionally have to perform a second laparotomy later on. I shall report a continuance of my work in this direction at the next meeting of the Society.

ABSTRACTS.*

This Department is in Charge of the Following Staff of Sub-Editors:

DR. T. W. CLEVELAND, DR. G. H. MALLET, DR. A. D. CHAFFEE,
AND DR. W. T. KLEIN.

GYNÆCOLOGY.

UNITED STATES.

Functional Uterine Disorders as seen in the virgin.

E. M. CLARK, M.D. (*Philadelphia Polyclinic*, August 27, 1898), offers some suggestions to aid in determining when it is necessary or advisable to make a pelvic examination and institute local treatment in the case of young unmarried women.

In amenorrhœa, where the history and appearance of the patient point to a condition clearly outside of the pelvis, all agree that local examination and treatment are not called for. Speaking of physiologic menstruation Schaeffer says: "The entire process (menstruation and ovulation) is regulated centrally." In the light of this theory it is not surprising that we should see in the young woman such various clinical manifestations of uterine disorders, nor strange that vague and remote symptoms should arise coincidentally or as a consequence of perverted or morbid processes in the development, nutrition and functions of the pelvic viscera.

Excess in any direction, overexertion either in work or play; overstimulation, mental or emotional; exposure to cold, even indiscretion in diet, may modify or affect the menstrual function.

Skin lesions, digestive disturbances, and the various neuroses that so frequently accompany some uterine aberration, are not so much dependent upon the latter as due to the same systematic cause. Often they are looked upon as reflex manifestations, the blame falling upon the uterus and an unsuccessful course of treatment is instituted.

Perhaps there is no other symptom in the otherwise healthy

*All Abstracts are made *directly* from original articles in the language in which they were first published.—EDITOR.

young girl which so frequently leads her to seek aid from the doctor as dysmenorrhœa. Pain, the one symptom of every variety of dysmenorrhœa, must be relieved and its cause sought for. This may or may not require a pelvic examination. It is fallacious teaching to say: "In every case of dysmenorrhœa the condition of the entire genital tract must be determined by actual bimanual examination and exploration with the sound." A satisfactory diagnosis can generally be made without its use. A complete examination of the patient is necessary in order to treat intelligently; not merely an examination of one set of organs, but such as will render the diagnosis clear, and that need not of necessity include any local questioning of the pelvic organs.

Menorrhagia and metrorrhagia are symptoms more apt to be directly dependent upon some pelvic disease *per se*. Yet they may be due to a blood dyscrasia or to functional or organic heart disease.

The Use of Calcium Carbide in the Relief of Cancer of the Uterus.

J. H. ETHERIDGE (*The Clinical Review*, September, 1898) reports two cases of carcinoma of the uterus treated with calcium carbide. Carbide of calcium was recently discovered by Maisson. By the addition of water it gives off acetylene gas, which is an illuminant of remarkable properties. The first patient upon whom the author used it was 68 years of age, who had passed the change of life about twenty years before. The uterus was very small and the cervix carcinomatous. She had had hæmorrhages for six months before seeking relief. The cervix was entirely gone and the uterus seemed nothing but a cavity. A curette was used and a piece of the carbide was placed into the cavity. The result was instantly a bubbling and boiling. A tight packing of iodoform gauze was then introduced and left for three days. The elimination of gas was very painful for a few hours. Every three days she was treated in this way and after five or six treatments the cancerous ulcer to all appearances was converted into a simple ulcer. By the end of three months the cavity, which had been large enough to insert an egg, would only admit the end of a pencil. This was continued until the cavity disappeared entirely. Three months later no sign of it but the cicatrix remained.

Second case was a woman passed fifty, beyond the change of life, well nourished, and active. The cervix was nearly all gone; she was greatly annoyed with the odor, discharge, and hæmorrhage.

The same treatment was used and continued until the cancer was entirely obliterated. She seems well to-day. The author is now using the remedy on half a dozen cases with beneficial results. The time is too brief to pronounce them cured.

The author is uncertain as to the therapeutic agent. He thinks it is the acetylene gas. The result is the abolition of odor, hæmorrhage and discharge.

GREAT BRITAIN.

Removal of One Free Calcified and Two Subserous Pedunculated Fibromyomata during Pregnancy.

A. J. WALLACE (*British Medical Journal*, April 30, 1898) reports the following interesting case:

Patient had not menstruated for two months. Two years previous had had a miscarriage and nearly died from hæmorrhage.

Lying in the central part of the abdomen immediately above the pubes was a rounded tumor of fairly smooth surface, not tender at all but of hard consistence. The pregnant uterus was found retroverted below and behind the tumor. The latter could again readily be felt, about the size of a foetal head, and between the tumor and uterus a mass about the size of a pigeon's egg could be distinguished. Movement of the tumor did not affect the uterus.

An abdominal incision was made, and the tumor proved to be a fibroid that had undergone calcareous degeneration. The tumor was connected to the pelvis by many bands of adhesions, but no connection to the uterus was found. Firm adhesions were found between the appendix and intestines and great omentum. The pregnant uterus was found lying retroverted in Douglas's pouch. Two subperitonæal myofibromata were attached to its anterior wall by a common pedicle. These also were removed. The patient made an uneventful recovery. It is uncommon during life to find fibromyomata lying free in the peritonæal cavity, and very rarely are such tumors calcified. Two cases have been reported lately where such tumors were removed by operation.

OBSTETRICS.

UNITED STATES.

A Case of Retained Placenta with Subsequent Fecundation and Results.

V. L. TODD (*Therapeutic Digest and Formulary*, August, 1898) reports a case which was unique in his experience, hoping to hear of similar cases from others. Mrs. W. aborted at the end of the second month, but the products of conception had been destroyed before the writer's arrival. Mrs. W. and a woman friend who was present were positive that everything had come away. As there was no hæmorrhage and the uterus was firmly contracted, the necessary remedies were prescribed and the patient was left, she having refused a vaginal examination.

Three months later he was called in and found another miscarriage in progress. The foetus and secundines were passed intact, the foetus being apparently of a six-weeks' growth and in a healthy condition. The hæmorrhage was slight, the uterus fairly well contracted, and the patient comfortable. Ergot was prescribed in half-dram doses every two hours.

Two hours later there was a hasty summons, with the statement that the patient was dying from hæmorrhage. She was found in a state of profound collapse. A hasty examination revealed what afterward proved to be half of a four- or five-months' placenta, detached, but in the uterus. This was removed. The remainder of the placenta was firmly adherent. The uterus was packed with gauze and the vagina tamponed. On the following day curettage was performed, bringing away most of the remaining placenta. Owing to the severe hæmorrhage the uterus and vagina were again packed and the next day thorough curettage was performed. The tamponing was continued for several days; there was no recurrence of the hæmorrhage, and only slight temperature at any time.

The facts of the case seem to be: There was conception followed in about two months by the expulsion of the foetus and retention of the secundines. In six weeks the patient became again pregnant only to abort again at the end of six weeks, this time the foetus and secundines coming away intact, followed by the remains of the first impregnation in a perfectly aseptic condition.

A Case of Podalic Version.

ANDREW C. KEMPER (*Cincinnati Lancet-Clinic*, August, 1898) was called in to see Mrs. S. in "preternatural labor" with her third child. Her previous confinements had been normal, but she had recently suffered with nervous prostration due to overwork. He found the patient in excellent physical condition, and "her spirit was brave enough to tackle courageously whatever might be before her." The membranes had been ruptured for an hour, and everything was saturated with liquor amnii, yet considerable remained in the uterus. The foetal heart was distinctly heard. The pains had ceased and examination discovered the child's hand lying upon the bedclothes; half the forearm was exposed. It was evidently a right-shoulder presentation, and the indications for podalic version were plain. In following up the child's arm with the hand through the os, the pulsating cord was encountered; it was wound around the arm, then a knot was tied in it; from the shoulder in encircled the child's neck. After delivery the cord was found to be six feet and four inches long and Wharton's jelly was in excess. "A bold sortie was made into the undiscovered country beyond in search of the left foot," but the right was at first encountered and rejected. After the left foot was found, the left hip was slightly raised upward, to the right, and forward. The left foot was drawn gently forward and downward, while the external hand of the operator pressed the head downward, backward, and from right to left. The hips followed the left leg, revolved over the abdomen, while the head swept across the brim of the pelvis from right to left. The right foot was now brought down parallel with the left and stronger traction exerted, and the head passed into an occipito-anterior position. The arms were hooked down, the cord being carefully guarded, and in less than fifteen minutes from the attendant's entrance into the room the child was delivered without the mother's having received or needed an anæsthetic. The child was asphyxiated at first, but soon revived and did well until the sixth day, when a statement was sent the writer that the child would not nurse. (The writer had discontinued his visits after the fourth day, as was his custom.) On the seventh day it was reported all right, but on the eighth the complaint was renewed, and the writer was called to see the child. He awoke the infant from a quiet sleep and placed it at the breast, from which the milk came freely and easily. The moment the child's lips touched the nipple they closed in tonic spasm, the convulsion becom-

ing general. The infant was fed with breast milk from a spoon for two days and did well, but on the tenth day it was placed at the breast, immediately went into convulsions, and died. The mother's recovery was uneventful and complete.

Uræmia in the Process of Child-Bearing.

HENRY F. LEWIS (*Am. Jour. Obs.*, August, 1898) says that by the term uræmia we mean the condition of the system resulting from the retention in the blood of toxic products normally eliminated in the urine. Eclampsia is a frequent sequel of uræmia in child-bearing. In this article not only eclampsia, but neuroses and other symptoms due to the toxæmia accompanying or following pregnancy, are included. The uræmia may be due to a preexisting renal lesion or to an acute abnormal state arising during pregnancy; the latter is the more common.

Cases of eclampsia where there was no sign of albuminuria or other urinary disturbance have been reported by careful writers, but they seem doubtful. Albumin may be absent from one specimen of urine and present in another taken the same day. Absence of abnormal conditions can only be positively stated when examination of the whole amount passed in twenty-four hours is made, and that for many consecutive days. Albumin and casts may be absent a few hours before an eclamptic seizure but both are usually found afterward, leading some authors to assert that the albuminuria was the effect rather than the cause of the eclampsia. This is not probable, as kidney disturbances seldom or never follow the most violent convulsions of a different nature.

The first records tending to show the causal relation between renal disease and eclampsia were made by Demanet in 1797, before Bright had written his articles on nephritis.

Albuminuria occurs in about five per cent. of pregnant women; though some writers place the figure as high as fifty per cent. Eclampsia is said to be more common among those suffering from nervous excitement, in multiple pregnancies, in hydramnios, and in deformed pelves. It occurs in primiparæ three times as often as in multiparæ, and is more common among the very old or very young primiparæ.

What the poison of uræmia is, and what causes it to appear, have long been points of controversy, and have been answered in various ways. As to the first, it is said that the poison is urea; that it is

carbonate of ammonium; that it is kreatin and kreatinin; that it is some abnormal ferment; that it is a product of the metabolism of the foetus; or an infective ptomaine. As to the second, it is answered that abdominal pressure causes passive congestion of the kidneys, or pressure on the renal arteries causes anæmia of the kidneys, or pressure on the ureters causes a urinary stasis, or irritation of the pelvic nerves causes a reflex spasm of the renal vessels, or that the hydremia of pregnancy causes a diminished nutrition of the kidneys and consequent failure of their excretory powers, and that the same cause acts on the liver, interfering with the abstraction of urea and other waste products from the blood.

As has been stated, albuminuria and eclampsia occur with greater frequency in cases where there is unusual distension of the abdomen from any cause, and where there is, consequently, increased pressure on the abdominal organs. Moreover, the albumin appears, in the vast majority of cases, during the last three months of pregnancy. That a general venous stasis exists is shown by the hypertrophy of the left ventricle, by the varicose veins in the vulva and legs, by œdema of the feet, and by the digestive symptoms so often observed. That the liver and kidneys share in this passive congestion there can be no doubt. Cases where albumin is found early in pregnancy are usually those where there is a catarrhal condition of the urinary passages, or preexisting renal disease. The erect posture is perhaps responsible for the urinary disorders of pregnancy, as in quadrupeds there is no pressure on veins or ureters, and puerperal eclampsia is unknown among animals. The remission of the intensity of the uræmic symptoms following the emptying of the uterus or even the rupture of the membranes bears on this point.

Halbertsma's theory that eclampsia is caused by the pressure of the presenting part on the ureters, and consequent retention of the excretory products in the blood, is combated by the fact that eclampsia and all uræmic conditions are often observed in all different presentations, and, moreover, autopsy seldom shows dilatation of the ureter, nor does the closure of these ducts by operations or from pressure of tumors produce uræmic convulsions.

Goldberg and Elliot lay stress on the influence of heredity. Some authorities, notably Lusk, reject the uræmic origin of eclampsia, and attribute it chiefly to reflex irritation. Lantos of Budapest believes the albuminuria itself to be due to reflex irritation of the renal and sympathetic nerves. Others look to arterial spasm and consequent brain anæmia as a cause, but the cause of the vascular spasm may

be toxæmia or reflex irritation. This would account for the sudden attacks and equally quick restoration, and the negative findings of many autopsies. Several bacilli have been suspected of causing eclampsia, and careful reports of cultures made, but the observations have not been verified by the investigations of others.

The exact nature of the poison cannot be stated. It was thought to be urea, but solutions of pure urea, unless far in excess of any amount ever found in Nature, produced no such symptoms. Herman traces carefully the relationship of the diminished secretion of urea and uremic spasms, while Braun considers the urea transformed into carbonate of ammonium by some unknown ferment. But except in a single case neither urea nor carbonate of ammonium have been found in the blood of eclamptics. Keratin and keratinin are found in excess in the blood of eclamptics, due to the inability of the kidneys to eliminate them; the liver is probably partly responsible for this failure. Some writers, observing a favorable influence from the death of the foetus, and have attributed it to the lessening of the manufacture of toxins, especially acetone; but acetonuria, like eclampsia, probably follows, not causes, uremia. Recent studies tend to show that the liver may play an important part in the causation of so-called uræmic symptoms. The lungs, intestines, and skin are important emunctory organs, and a deficiency of excretion here may lead to auto-infection.

In nephritis and albuminuria of pregnancy there are found, in a large per cent. of cases, white infarctions in the placenta. The cause is thought to be nutritive disturbance of the decidua. The toxicity of the urine of eclamptics varies, but that of the blood-serum increases enormously during convulsions. Semmola experimented with subcutaneous injections of egg-albumen in dogs, their continuance causing distinct anatomical changes in the kidneys. He considers albuminuria as due to a dyscrasia, such as acute infectious disease, gout, rheumatism, or toxæmia. His theory fits with the clinical facts of uræmia in child-bearing; as he expresses it, "albuminuria arises from a modification in the diffusibility of the sero-albumin resulting from molecular changes in the blood."

The findings in the post-mortems vary much in themselves and in the interpretations put upon them by authorities. In many cases accurate observers have found nothing abnormal in the gross or minute structural appearances in the kidneys. Acute inflammatory changes are the most frequent. In the liver are often found hæmorrhagic foci. In the brain are found often anæmia, œdema, and

diminished consistence; in the lungs, œdema constantly, and often emphysema; in the heart, usually emptiness and flaccidity; in the spleen, enlargement. Leyden says that anæmia of the kidneys always is found.

The auto-intoxication of pregnancy exhibits itself in all phases from headache and swelling of the feet to eclampsia and puerperal mania. The quantity of the albumin usually has an intimate relation to the extent, intensity, and duration of the acute Bright's disease, but not so constantly to the violence of the eclampsia. There is a class of cases where the urine is very free, specific gravity low, and albuminuria slight, but which result in eclampsia, sometimes fatal. These cases are deceptive and should be guarded against by examining the daily quantity to ascertain if there be a diminution in the amount of urea passed. The writer cites a case in which the patient showed no symptoms of uremia until eight hours after delivery, when a convulsion occurred. Albuminuria persisted for some time, but ultimately passed away. Prophylaxis, especially dietary, is most important. It is uncommon for symptoms to appear before the fifth month; occurring before the seventh month they are always fatal to the fœtus.

Another case is mentioned of a young primipara, who had nausea and vomiting at the third month, coming on again at about four and a half months, together with severe pain in head and epigastrium. There was complete suppression of urine for two days in spite of active treatment; the patient became comatose and died. A few drops of urine obtained by the catheter were only moderately albuminous. In any case the prognosis is worse the earlier in pregnancy the albuminuria begins. The condition of the pulse is of great prognostic value. In the majority of cases, when the puerperium is past, the albuminuria disappears, sometimes gradually, often immediately. A not infrequent sequel of uræmic poisoning in pregnant women is mania or less severe mental disturbances; most cases recover in a comparatively short time. Placenta prævia rarely exists with uræmia. Women suffering from uræmia do not seem more liable to sepsis than others, except as they are more liable to operative interference.

The occurrence of the first symptoms, such as low specific gravity, scanty urine, headaches, nausea, etc., should be the signal to put the patient on an exclusively milk diet until the more alarming symptoms subside, and after that nitrogenous foods should be largely avoided. Travel should be avoided as much as possible. Iron and

other tonics should be prescribed for the anæmia usually present. Mild diuretics, warm baths, and the drinking of much water should be advised. The bowels should be kept free with laxatives, preferably mild salines.

If prophylaxis fail, the question of inducing labor arises. Where the symptoms persist, and become more grave, the induction of labor should be performed as rapidly as possible. Charpentier and the French, as a rule, advise waiting for the natural termination of labor. They advise the use of chloral to the point of narcosis in eclampsia. Many of the German school advocate forcible delivery under complete chloroform anæsthesia. Between these extremes there are many middle courses.

Bleeding seems a rational treatment and is almost always immediately beneficial, but it is a question if the after-effects are not injurious, as anæmia is produced. Methods to favor increased excretion of waste products by the skin and bowels as well as by the kidneys are directly indicated, and in the graver attacks, pilocarpine, hot air, elaterium, and drastic hydrogogues are employed, but caution must be observed in their use, as they depress the heart, and upon the maintenance of the cardiac strength depends the hope of recovery.

Veratrum viride has been used, especially in this country, but sufficient statistics have not been prepared to enable one to speak in unqualified praise of so powerful a depressant.

Gustav Veie strongly recommends morphine, keeping the patient completely under its influence for hours or even days, until the child is born. Many others claim that the most favorable prognosis for mother and child is obtained by this method of treatment.

Dührssen does away with the slow process of dilating the os by making incisions in the cervix, then turning or applying high forceps, thus emptying the uterus as speedily as possible and giving the patient a better chance of recovery.

*The Obstetric Forceps as a Cause of Mental and Nervous Disease:
A Protest.*

V. M. REICHARD (*Med. News*, August 13, 1898) says that it has become almost an accepted dictum among certain neurologists that, given a child in whom there is a mental or nervous defect and a history of forceps delivery, the relation of cause and effect necessarily exists. Against this trend of opinion he records a positive

protest taken from a long experience, and expresses his opinion that cerebral membranes and tissues are in far more danger from the pressure due to prolonged labor than from the proper use of forceps. The use of forceps must not be condemned because in unskilled hands they produce poor results. A case illustrative of the dangers of delay may be cited. When the author was called in consultation the patient had been in hard labor for twenty-four hours; vaginal examination revealed a large boggy mass projecting downward. The os was fully dilated and the head lodged on the pelvic brim. No fontanelle or suture could be made out. Forceps were applied with difficulty, and with external manipulation and slow, steady traction a living child weighing eight and a half pounds was delivered. The caput succedaneum was so enormous that the child looked double-headed, one head superimposed upon the other. The child was unconscious for a week, during which time it had more than one hundred tonic convulsions. It gradually recovered, and is now a strong boy at school, wearing a $7\frac{3}{8}$ hat. Of fair intelligence, he is a moral terror. Any slight indiscretion in diet brings on dreadful tonic convulsions.

Children are often injured in forceps-delivery by the malformed maternal structures rather than by the forceps. All who have seen many occipito-posterior deliveries must have been struck with the facility with which cerebral tissues change their relative positions, with no resulting harm. According to the ultra neurologists, every such delivery should result in a crippled brain. In thirty of these patients, some of them more than twelve years old, not a single bad result has occurred.

Even marked depressions caused by the forceps blade have gradually disappeared, with no mental disturbances. All cases of mental or nervous defects coming under the writer's observation have been in children where the delivery was normal. The forceps, badly applied, may do damage, as may the pulling of the head through a contracted pelvis, but often this latter risk must be taken; but that the simple application of forceps, with normal maternal resistance, is a source of danger to the child's brain, is an idea against which a vigorous protest is made.

Some Obstetrical Emergencies.

ROBERT McCONAUGHY (*Western Med. Review*, August, 1898) details several cases which presented trying complications with

which he had met in his practice. *Case I.* was attended by him during the period of pregnancy with no suggestion of abnormal conditions. Labor began at full term and as it progressed hæmorrhage became alarming and tampons were used. Dilatation progressed rapidly, but the hæmorrhage become so alarming that forcible delivery was resorted to. Turning was not needed as the os was so dilated that forceps could be applied. The mother died before the completion of delivery. Five years later he was called to see, in consultation, a woman who had been in labor for three days. The patient was extremely exhausted. The forceps had been tried, but could not be locked. Craniotomy was resorted to and there was a gush of water from the hydrocephalic head. The body of the fœtus was very large, weighing fourteen pounds. The woman died the same day. In 1891 a patient of 35 years of age was delivered of her first child after a severe labor. The child had spina bifida and died in three days. Eight months later she had a miscarriage, and fourteen months later she was delivered of well-developed twins. The placenta was retained for six hours, and was so high in the uterus that it could not be delivered by ordinary means. Chloroform was given and the hand passed half-way into the uterus when a constriction was encountered. This was forcibly dilated, the placenta removed, and all antiseptic precautions were observed. There was but little fever until the sixth day, when alarming septic symptoms developed and she died within twenty-four hours.

In 1895 he was called hastily to find the patient in severe convulsions. *Veratrum viride* was given and chloroform administered. Labor had not begun, but the cervix was forcibly dilated, the child turned and delivered with great difficulty. Examination revealed another child, which was delivered speedily. There were no more convulsions, and recovery was rapid, but both children were dead.

In 1898 the doctor was summoned to a town twenty-five miles away to see a delicate woman of 20 years in labor with her first child. She had been in severe pain for thirty-six hours, but for the past four hours had had no pains. Forceps were tried without avail. Cæsarian section was refused by the family. Craniotomy was performed, but the woman never rallied and soon died.

In the case of Mrs. F., a primipara of 18 years, the pains were severe, dilatation soon completed, but the head made no progress. Chloroform was given and the forceps applied. At first they seemed unavailing, but perseverance and pressure finally so moulded the head that a lifeless child was delivered. The mother recovered.

These cases are presented not as unusual, but to show the emergencies constantly arising in active practice, causing grave anxiety to the conscientious physician.

GREAT BRITAIN.

Primary Menstruation and First Pregnancy in Middle Life.

J. F. WOLFE (*Lancet*, August 6, 1898) reports the case of a woman who had never menstruated until forty-four years of age. She had been married eleven years. At the above age she was seriously frightened and commenced menstruating the same day. She menstruated a few times at irregular intervals, then became pregnant, and was delivered when forty-five years old of a healthy infant. Labor was normal, the breasts were fairly developed, and milk came freely on the third day. There was nothing unusual about the external genitals, and the patient had never in her life been seriously ill.

Expulsion of the Entire Uterine Contents at the Seventh Month.

W. F. GARDENER (*Ibid.*) says that the patient was at the time of her delivery in the last stage of phthisis, unable to lie down at all. During the day she had slight pains, becoming more severe toward evening, when with two or three violent straining efforts the child, contained in the membranes, and the placenta were suddenly expelled. The membranes were at once ruptured, but the child had been dead some hours. The mother died that night.

Pregnancy Simulating Pedunculated Fibroid.

E. PAGET THURSTAN (*Ibid.*) of Perth, Western Australia, was asked to examine, in consultation, a patient who believed herself to be four-months' pregnant. She had some milk in her breasts, but there had been no morning sickness, no feeling of life, nor could any placental bruit or foetal heart be heard. She was now suffering from severe pain in the back and groins. A tumor of irregular outline could be felt through the abdominal wall just above the pubes. Vaginal examination showed the os high up and patulous. Bimanually, a round, hard mass, freely movable, could be felt; while behind, and rising above the level of the umbilicus was an irregular

mass only slightly movable. Dr. Thurstan believed it a case of pregnancy with pedunculated fibroid, while Dr. Hayes thought it possible that the whole was uterine. As pregnancy was probable no operation was advised. Three days after examination, after violent hæmorrhage and great pain, the patient was suddenly delivered of a foetus with membranes, placenta, and all in a mass. The appearances showed that the placenta prævia had existed. Both tumors at once disappeared. It was probably a case of elongated neck of uterus with very thin walls, allowing the foetal head to be felt through the abdominal wall as a floating tumor.

CANADA.

Abdominal Pregnancy.

S. H. LARGE (*Canada Lancet*, August, 1898) was called by Dr. Hurlburt to see a patient aged 36, suffering from abdominal pain, most severe in region of liver. Pulse, 90; temperature, 99° F. Menstruation regular, and bowels constipated. Vaginal examination revealed the os patulous, and the right tube enlarged and tender. Ordered mustard over stomach, and iodine on right side. Applied belladonna and glycerine to uterus, and gave remedies to relieve constipation. Speedy recovery. Nearly four months later the patient was seized with violent pain in right iliac region. Temperature normal and pulse 110. The os was normal and the uterus empty. A distinct, tender tumor could be felt on the left side. Abdominal pregnancy was diagnosed, and an operation decided upon for the next morning. The patient suffered terribly during the night, and in the morning the abdomen was distended and tympanitic, the extremities cold, and pulse 120 and thready. The dining-room was hastily prepared for the operation; no trained nurses were available, but two neighbors assisted. The abdomen was thoroughly cleansed and the patient anæsthetized. The uterus was empty. A four-inch incision was made in the median line and a five-months' foetus was found lying among the intestines, together with many clots and serous fluid, showing that the sac had ruptured. Severe hæmorrhage followed the separation of the placenta, but was controlled by the use of hot water and artery-forceps. The cavity was dried with prepared lint, a drainage-tube inserted, and the wound closed and dressed. The patient made an excellent recovery.

PÆDIATRICS.

UNITED STATES.

The Absence of Fæces in Suckling Cats.

B. B. BELL (*Southern Med. Rec.*, July, 1898) appears to have been a youth of discernment and investigating mind, who in his boyish wanderings in the realm of common or garden science sowed the seed that in his maturer years has blossomed and borne fruit in the ripe article before us. He recalls the fact that he used to wonder that he never perceived any odor or other sign of fæces about young kittens, although he had learned to provoke older cats to a discharge, the disagreeable memory of which he clearly retains. Recently a fine cat was given to him and he was enabled to resume his investigations. In the Sunny South matters relative to sex are treated with the contempt they deserve, which probably explains the fact that the cat, though a female, was named Black Joe; this item, however pregnant with interest it may be, cannot probably be credited with any etiological significance in regard to the peculiarity of the kittens, which in the process of time the cat bore. These kittens were put in a clean box in the doctor's office and watched almost constantly, being under lock and key the remainder of the time. No trace of fæces or urine could be discovered by sight or smell, the mother cat was never observed to carry anything away nor to lick any secretion from the anus or genitals, nor does it seem likely that she would swallow the excreta as has been asserted. One of the kittens died in about a month, possibly wearied by the perpetual surveillance, small cats being, as a rule, rather inappreciative of scientific experiment. When the other was six weeks old the mother cat brought it a rat, of which the kitten sucked the blood; the next morning the doctor found a small mass of "cat fæces." Since that time whenever the kitten has had animal food fæces have been found within twenty-four hours; at other times, none.

These facts would seem to disprove the accepted belief that it is impossible for a highly organized animal to exist without excreta. The importance of the subject to the profession need not be enlarged upon, the writer says; and it seems to us that it is of peculiar interest to pædiatrists. Babies differ, no doubt, from kittens; for, while it is the usual custom to exclude rats from their dietary, they still possess solid excreta; but in these days of all sorts of baby-foods,

humanized, modified, sterilized, pasteurized, peptonized, pancreatinized, and "otherized" milks, it seems to us that we ought to be able to find the principle that underlies the discovery of the doctor about kittens and apply the same to human infants. The doctor seems not quite so certain about the lack of urine as about that of fæces; but probably the excretion of the former could also be obviated by the extension of this undiscovered but no doubt simple principle. Of more interest even than to physicians is this matter to mothers, and indirectly to the other members of families; soon we shall no longer encounter the ubiquitous and clammy diaper radiating in all directions from the baby as a center, its domestic aroma spreading through the house even to the top floor front and mingling itself gratefully with the smell of the soup and the coffee as we sit at table. Urine and fæces will be relics of a former age; and we may confidently look forward to the day when no family that considers itself abreast of the times will have any other than an automatic baby, so arranged and so fed as to preclude any possibility of an atavistic return to the unclean habits of its ancestors.

Remarks on Some of the Dangers attending a Chronic Suppuration of the Middle Ear.

F. B. SPRAGUE (*Atlantic Med. Week.*, July 30, 1898) says that otorrhœa generally results from secondary infection of an acute middle-ear catarrh, either through the Eustachian tube from blowing the nose or using the Politzer bag before the nose and nasopharynx are properly cleansed, or through the external canal from lack of cleanliness of the syringes, instruments, cotton, or other foreign substance introduced. Physicians as well as parents are very prone to neglect an otorrhœa; the fact that such a discharge has lasted for years does not guarantee immunity from its serious sequelæ should fresh infection or acute exacerbation occur. When the disease has lasted three months it is probable that there is some tissue necrosis; the incus usually becomes carious first, then the malleus, then the outer wall of the attic, and later various parts of the temporal bone. The amount of discharge may be so slight as to be seen only on careful examination by the physician; in these cases it dries on the wall of the canal. The derangement of hearing is rarely proportionate to the damage to the drumhead. Sometimes the process is reversed and the middle ear furnishes infection to the nose and nasopharynx, and from these latter even to the larynx, lungs, and intestinal tract; the blood

may also carry infection. Bordering on the tympanic cavity and separated therefrom by very thin partitions are the cranial cavity, the glenoid fossa and the jugular fossa; in children it is not uncommon to find an opening in the roof of the tympanic cavity that leaves the mucous membrane in contact with the dura mater; sometimes also the facial nerve instead of being enclosed in the Fallopian canal is sheathed only with mucous membrane; and in both these cases extension of the inflammation is very easy. Without much affection of hearing, pathological destruction of the temporal bone may lead to the most widespread maladies. The ordinary paths of infection are through the veins, the perivascular sheaths of the arteries, the lymphatics, the perineural sheaths, the window of the promontory, by erosion of the inner cortex with direct transmission of the pus, or by the formation of a plastic exudate on the brain surface from the extreme thinness of the roof of the tympanum or antrum. Macewen says that the majority of pyogenic brain affections arise from neglected otitis media. The disease in its acute stages has no less serious complications but is less likely to be neglected at that time than when it has assumed chronicity. Regarding prophylactic treatment the writer mentions only some things to be avoided—morphia or other analgesics, counter-irritants, poultices, and the popular sweet oil and laudanum.

Cervical Adenitis in Childhood.

G. W. MORAN (*Phys. and Surg.*, August, 1898) gives as the most frequent causes of acute cervical adenitis catarrh of the nose and throat, adenoids, decayed teeth, unhealthy tonsils, stomatitis, and middle-ear trouble. Prophylactic treatment consists in keeping the mucous membrane clean in catarrhal diseases, correcting unhealthy conditions of the vault, removing large tonsils, and *care of the teeth*. In the inflammatory stage cold applications are good but heat is usually better borne; a liniment or ointment of opium or belladonna checks the pain and perhaps helps to hinder suppuration; as soon as pus is present it is not best to wait for it to point but to evacuate it immediately, curetting afterward if necessary. When suppuration does not occur but the gland remains large and tender, potassium iodide may be used in the form of an ointment or internally. Chronic cervical adenitis may be simple, tubercular, or syphilitic. The simple form is dependent on a lymphatic diathesis, which renders the glands susceptible to hyperplasia from mild infections of the same sort as give rise to the acute form and from some chronic skin affec-

tions; it predisposes to, rather than results from, successive acute attacks; it is rare after the age of four and the enlargement is comparatively rapid but never goes on to the suppuration, caseation, or adherence common in the tubercular form. Treatment consists in the removal of the various sources of infection, tonics, and, locally, potassium iodide ointment. In tubercular adenitis we have the same ætiological factors in addition to an inherited predisposition and lowered vitality; the upper deep cervical glands are usually first involved; some undergo early caseation and softening, perhaps with the formation of periglandular abscesses; in others there is formation of fibrous tissue and thickening of the capsule, possibly later caseation, but rarely periglandular abscess; other sets of glands become gradually involved, but without extensive caseation and periglandular abscess the health of the patient is not greatly affected, and only about five per cent. of these cases ultimately die of tuberculosis. The treatment is the general one adapted to tuberculosis; but when caseation, softening, or periglandular abscess occur incision and drainage should be practised at the earliest possible moment to avoid further infection, burrowing of pus, and destruction of skin and subcutaneous tissues; excision is advisable only when the gland is superficial and movable. Syphilitic cervical adenitis is comparatively rare, is usually accompanied by general glandular enlargement and other signs of syphilis, and should receive the ordinary general treatment of syphilis; surgical treatment, if indicated, should be the same as in other forms of chronic cervical adenitis.

*Strangulated Hernia in an Infant Thirty-four Days Old.
Operation; Recovery.*

C. C. ALLISON (*West. Med. Review*, August 15, 1898) reports the case of a child, thirty-four days old, who for thirty hours had had vomiting, no bowel movement, anuria, and a firm tender enlargement in the left inguinal region. Taxis was considered inadvisable. According to the suggestion of Dowd a straight incision was made from above downward, when the constriction was found to be at the aponeurosis of the external oblique; eight inches of small intestine were found strangulated and of a deep purple color; after twenty minutes of irrigation with warm saline solution it was replaced, and a Bassini done. Eight ounces of normal salt solution were introduced into the axilla during the operation. The next day the child's temperature was $106\frac{1}{2}^{\circ}$ F., but small doses of calomel with two colonic

irrigations at 85° F. reduced it, and after the second day it remained normal. Only one case in an infant younger than the above—twenty-two days old—has been reported.

The Treatment of Rachitic Deformities.

R. H. SAYRE (*Pediatrics*, August 15, 1898) thinks there is too great a tendency to defer the treatment of rachitic deformities till an osteotomy may be done, to the neglect of other measures. Of the essential cause of the disease we know very little; it has been produced in animals by injections of lactic acid and has been attributed to an excess of this substance; it has also been produced by withholding fat, proteids, and lime salts from the food, and its probable cause seems to be an insufficient supply or defective assimilation of these materials. The result in the bones is that the cells of the epiphysial cartilages and of the inner surface of the periosteum proliferate enormously and irregularly, the blood-vessels and Haversian canals increase in size, ossification is retarded or arrested and the layer of hard bone is absorbed, leaving the whole structure flexible; later ossification is very rapid and the bone becomes unduly hard.

Treatment should therefore be adapted to the stage of the disease. Children should be examined for the early signs of the disease when much may be done by simple measures. Cod-liver oil is of great benefit and the writer believes in the use of phosphorus; he uses the elixir (N. F.) and gives a child a year old $\frac{1}{10}$ of a grain three times a day. Small children with rickets should be kept recumbent and have daily massage; often slight curvature of the spine can be detected, for which a wire cuirass is useful. Manipulation by the hand is of benefit for the curved bones that are sometimes found in children before they walk, but must often be supplemented by mechanical devices. Often children are brought to the surgeon to be cured of pigeon-toe, an instinctive turning in of the toes to avoid strain on the arch of the foot, the parts of which are weak and debilitated from rickets. In such cases an apparatus that makes the toes turn out only does harm, causing flat-foot and a tendency toward knock-knee. If decided bow-leg or knock-knee be present while yet the bone retains any springiness, the writer uses a plaster splint extending from the toes to the top of the thigh, bending the leg as nearly straight as may be while the plaster sets; if this does not wholly correct the deformity, after a day or two he cuts the plaster shell at the point of greatest deformity, and into the gap thus formed on bending the leg

toward a straight line, inserts a small wedge of wood and secures it by a few turns of plaster bandage. Care must be taken to protect bony prominences from undue pressure and to straighten the leg gradually enough not to cause pain. The writer prefers this method to any of those depending on braces and straps; one case in which it was successfully applied was a boy sixteen years old that suffered from a knock-knee of six-months' standing; after the legs were nearly straight he was allowed to walk about, still retaining the plaster splints. The writer thinks that adolescent rickets is responsible for many cases of lateral curvature; in such cases a plaster jacket must be worn till the soft stage of the disease has passed, however long that may take. When eburnation of the bones has taken place nothing but radical measures will suffice; the writer prefers osteotomy if the break within two inches of a joint is desired; otherwise he uses the osteoclast of Dr. Grattan as modified by Dr. A. M. Phelps. After operation absolute control of the fragments is necessary, and the splints should pass well up the thorax in cases of knock-knee, and well up the thighs in those of bow-legs; in many cases of knock-knee there is an inward rotation of the femur which must also be corrected by the position of the fragments. In cases of bow-legs in very small children it is often wise to keep the legs suspended at right angles to the body. In operative cases the deformity will return unless the limbs be supported for a long time and general treatment be instituted; and it is this later period, after the patient is up, that braces find their use. It must be remembered that in very rachitic cases union may fail to occur after the operation; and this fact emphasizes the importance of early treatment in all cases.

The Use of Antitoxin.

G. H. CATTERMOLE (*Med. News*, August 20, 1898) made the following observations at the Berlin Charity Hospital during the winter of 1897-8: That the hospital was infected was shown by the fact that three patients to whom immunizing injections were not given developed diphtheria in from two to seven days after admission. Therefore, to nearly all cases a protective dose of 500 units of Behring's antitoxin was given on entrance. Immunity lasted three or four weeks as was shown by a number of cases developing at this period after admission; such must have been infected in the hospital, the time being too long for incubation if the disease had been contracted outside. The latter class of cases was illustrated by the im-

munized children that developed diphtheria from three to five days after entrance; these cases were very mild, presenting an analogy to those cases of smallpox which are vaccinated after infection has taken place, or to the experiments of Wassermann, who has injected normal brain substance together with tetanus bacilli into animals without harm, while the control animals into whom only the bacilli were injected died. Once the disease is contracted, the earlier anti-toxin is given the better; when administered on the first day it is probable that all cases recover; if given too late in the disease it is possible for it to do harm. To children that have been exposed a prophylactic dose should be given at once. For both purposes the concentrated serums are the better, being more certain and less likely to be followed by serum erythema; this erythema resembles that of scarlet fever but is somewhat darker and accompanied with a lower temperature; and there is considerable swelling of the cervical glands. Patients with this complication are more likely to develop the septic form of the disease, the erythema prolonging the illness and thus favoring the growth of streptococci, which develop more slowly than the Klebs-Löffler bacilli. Serum erythema, however, is not of enough moment to make one hesitate in the use of the remedy.

Scurvy in Infants.

D. BOVAIRD (*Phila. Med. Jour.*, August 30, 1898) gives a summary of sixty-four cases of scurvy recorded in this country since 1894. The youngest was six months old, the oldest two and a half years. Sex was about equally divided. In many the hygienic surroundings were of the best, and in only one were they distinctly bad. Pain was present in all the cases; unwillingness to move the limbs was noted in twenty-eight; both sides of the body were usually involved, but one earlier and more severely than the other, the affection attacking the legs principally, and consisting in most cases of swelling and deep thickening. In only ten cases were the mouths normal; there is first congestion about the roots of the teeth, then the gums become swollen, soft, purple, and bleed easily, when slight injury may cause an ulcerative stomatitis. According to Northrup, pains in the extremities and spongy gums suffice for a diagnosis of scurvy. The pathological basis of these symptoms is the same, the pains being due to hæmorrhages beneath the periosteum and the mouth-affection to a hæmorrhagic process in the gums; there may be hæmorrhages in other parts. There may be anæmia, marasmus,

fever, or rickets. Thirty-two of the cases were fed on proprietary foods (including condensed milk); fifteen on sterilized cow's milk. Change from proprietary foods to sterilized milk cured two cases, and two others were cured by a change from sterilized to pasteurized milk. Three of the cases were breast-fed; one in particular, though in very bad surroundings, had been breast-fed with a milk that on analysis contained water, 87.2; fat, 4.5; casein, 2.1; sugar, 5.7; ash, 0.2 per cent. Treatment has been reduced to two things, fresh milk and orange juice. Recovery followed in from three days to seven weeks. But two cases died, one of which was diagnosed only at autopsy, and the other was seen altogether too late to save it. It is certain now that scurvy may be caused by sterilized milk, and also that it may occur in nurslings; the latter fact disproving any theory as to the causation of scurvy that has as yet been advanced.

GREAT BRITAIN.

Caries of the Spine: Modern Methods of Treatment.

NOBLE SMITH (*Lancet*, August 27, 1898) protests against the modern proposal that every case of spinal caries should be operated upon with the view to removal of the tuberculous bone. An efficient apparatus, carefully adjusted, by which the spine can be gradually or rapidly extended, in conjunction with proper food and medicine, will cure every case that has not become the subject of general tuberculosis. Of course, abscesses must be opened and scraped, and it may be necessary to cut down and remove necrosed bone. With regard to the complete removal of diseased bone, we cannot define its exact extent, nor, could we do so, would its excision preclude the further occurrence of disease in other parts; and the writer calls attention to a specimen—a vertical section of a spine—in which the angular deformity depends on the destruction of bone between the tenth and eleventh dorsal vertebræ, that presents tuberculous disease of six other vertebræ. The proper plan is to overcome the bacilli by improving the patient's vitality and to favor local repair by fixation of the spine. To remove broken-down bone is, in general, correct; but to cut down in every case and attempt to excise all affected bone is surely unwise; moreover, to cut away the laminæ and pedicles in order to reach the seat of disease is to remove the parts least often affected and of most value in maintaining the stability of the spine during repair.

Vaccination Rashes.

R. J. CARTER (*Ibid.*, August 20, 1898) admits that vaccination is responsible directly for some forms of eruption and indirectly for some others; but he believes that no rash, except vaccino-syphilis, that appears after the site of inoculation has healed should be ascribed to vaccination. Vaccinia proper, *i.e.*, such rashes as are due to the inoculation of pure virus without extraneous germs, should be classed among the exanthemata. Were extraneous skin diseases caused to any extent by vaccination their increase would have been noted with the great increase in vaccination. The writer classes vaccination rashes as follows:

Group I.—Eruptions resulting from pure vaccine inoculation.

A, Secondary local inoculation of vaccine. *B*, Eruptions before the vesicles form, urticaria, erythema multiforme, vesicular and bullous eruptions. *C*, Eruptions after formation of the vesicles due to the absorption of the virus: (*a*) morbilliform, scarlatiniform, and diffuse erythema, erythema multiforme, vaccine lichen, purpura; and (*b*) generalized vaccinia. *D*, Sequelæ of vaccination, eczema, psoriasis, pemphigus, urticaria, and congenital syphilitic rashes.

Group II.—Eruptions due to vaccine plus some other virus. *A*, Introduced at the time of vaccination: (*a*) producing local disease, impetigo contagiosa or other form of superficial inflammation; and (*b*) producing constitutional disease, syphilis, leprosy, and tuberculosis. *B*, Introduced after development and rupture of the vesicles (about the eighth day), erysipelas, cellulitis, impetigo contagiosa, furunculosis, gangrene, local or disseminate, and pyæmia."

In the case of the affections of Group I. the precise nature of the skin manifestation is determined by the "idiosyncrasy of the patient." Of several children vaccinated from the same source, only one may present a rash, or two may present different rashes; the rashes are also more common after inoculation with calf-lymph. They are simply generalized eruptions due to local irritation, except the secondary inoculations "*A*", which may be either auto-inoculations or accidental inoculation of others; of the latter, a case of a child is mentioned who developed vaccine vesicles over an eczematous area on its head and face, being infected while sleeping with another child that had recently been vaccinated. Under "*B*" the writer has seen only urticaria; it appears in the form known as urticaria papulosa. In "*C*" the eruptions are due to the absorption of the virus; those under (*a*) may all occur in smallpox preceding the

regular eruption, and it is possible that there is some peculiar condition of the tissues that reacts the same to variola and to vaccinia; perhaps the commonest of these is a rosy-red rash not unlike measles, the macules varying in size from a pin-point to a five-shilling piece; it fades after three or four days without desquamation. Papular or vesicular rashes may also be observed; purpuric rashes are very rare but have been reported in cachectic children. Regarding "D," most eczemas ascribed to vaccination have nothing to do with it, though in people predisposed to eczema it may follow vaccination as it might any other form of dermatitis; it may commence in the region of the vesicles or attack a large area suddenly, usually appearing about the tenth day. Cases have also occurred in which vaccination has seemed to cure an eczema. Psoriasis is very rare and urticaria as a sequela seems to be a coincidence. Congenital syphilitic rashes are placed under this head; they generally appear about the tenth day and are merely the result in a child, the subject of congenital syphilis, of the local and general disturbance caused by the vaccination; they occur more frequently with bovine lymph. They have nothing to do with the inoculation of syphilis with the vaccine.

The rashes of Group II. are mostly preventable, certainly those of "A." From the introduction of pus cocci impetigo contagiosa or lesser forms of superficial inflammation may take place, but are more frequently inoculated after the rupture of the vesicles. The occasional inoculation of syphilis cannot be denied; when simultaneous with that of vaccine, either alone or both may be transmitted; it is easily distinguished from the congenital form by its occurrence only after a specific sore and in no less than from fifty to ninety days after the vaccination. The introduction with vaccination of leprosy or tuberculosis is doubtful or exceedingly rare; and probably the transmission of all three of these diseases will be precluded by the use of glycerinated calf's lymph. Of "B," the most important disease is erysipelas; it is very fatal in young infants. If pus cocci are added there may be cellulitis. Impetigo occurs; also, furunculosis, apparently due to the absorption of pus cocci and their subsequent arrest in the skin. Local gangrene results in a deep, slowly healing ulcer; disseminated gangrene is a similar condition to that described as varicella gangrenosa. Pyæmia has also been reported, and keloid in the cicatrix may occur.

CANADA.

Infant Diet.

W. J. GRIEG (*Canadian Practitioner*, August, 1898) uses as the basis for modified milk the cream that rises on a fairly rich milk in six hours in a cold place; this cream contains approximately twelve per cent. of fat, and it is practically only in this respect that it differs from whole milk. The fat and proteids are then in the proportion of three to one, about the same as in mother's milk. If then we dilute it with two parts of water we get the following, which is approximately the same as mother's milk:

12-PER-CENT. CREAM.				
Fat..... 12 per cent.	}	divided by three	{	4 per cent. Fat.
Sugar..... 4 per cent.				1.3 per cent. Sugar.
Proteids... 3.9 per cent.				1.3 per cent. Proteids.

This proportion (between fats and proteids) remains the same even if it be necessary to dilute the milk still further in order to reduce the proteids. If we wish the proportion of fat to be greater we must use a sixteen-per-cent. cream. The desired seven per cent. of sugar may be obtained by using a seven-per-cent. solution of milk-sugar in distilled water as the diluting agent. To get alkalinity add $\frac{3}{4}$ jss of lime water to the quart. Without the proteids growth will not occur but in giving cow's milk it is necessary to make the percentage low at first, those of cow's milk being less digestible than those of mother's milk. Fat diminishes nitrogenous waste and acts as a laxative, but if in too great quantity will give indigestion with regurgitation and diarrhoea. Too much sugar will make the child fat, but anæmic and liable to diseases of malnutrition. Suppose we wish to devise a food for a child two months old: the feedings should be $\frac{3}{4}$ ijss at intervals of two and a half hours, that is, eight feedings in twenty-four hours; then $\frac{3}{4}$ xxvij will be needed. There should be about four per cent. of fat, seven per cent. of sugar, and one and one-half per cent. of proteids; the proportion of proteids should therefore be about three to one. Dilute twelve-per-cent. cream ($\frac{3}{4}$ ix 1-3) with a seven-per-cent. solution of milk-sugar ($\frac{3}{4}$ xvij 2-3); put $\frac{3}{4}$ ijss of this mixture into each of the eight bottles, submit them to a heat of 160° F. for a half-hour, and the food is ready.

AUSTRALASIA.

A Case of Abscess of the Cerebellum following Disease of the Ear.

T. S. KIRKLAND (*Australasian Med. Gaz.*, July 20, 1898) reports a case, 16 years old, that had suffered from otorrhoea from the left

ear for two or three years. Five days before examination the discharge had ceased, with the onset of fever and intense pain in the ear; the drum was found inflamed, and was incised with the exit of foul-smelling pus. The pain increased, and on the third day signs of mastoid disease presented themselves; the mastoid cells were opened and a few drops of pus escaped. The following day there was severe pain in the occiput, vomiting, giddiness, drowsiness, but normal temperature and pulse; examination showed a beginning optic neuritis, demonstrable only in the left eye. A diagnosis of cerebral or cerebellar abscess was made; the mastoid antrum was opened and cleansed, and the skull trephined one inch above the suprameatal wall; insertions of the trocar in the cerebrum and in the direction of the cerebellum revealed no pus and it was thought the patient might be suffering from acute encephalitis. On the following day further exploration was undertaken; the skull was trephined over the cerebellum, one and one-half inches behind the ear and one-fourth inch below Reid's base-line; here about half a dram of foul-smelling pus was found; a drainage-tube was inserted and small pieces of the bone were replaced; the discharge continued for three weeks, a small hernia cerebelli developing toward the end of that time, which readily dried up under an astringent dressing. The ear discharge finally stopped and all bad symptoms disappeared, except some trace of the optic neuritis. The first trephine hole filled with new bone, and the pieces inserted in the second grew in spite of the discharge. The supervention of the optic neuritis in this case was much earlier than usual. Also, it is said that cerebellar abscess is the result of extension along the lateral sinus; if so in this instance, it must have been external as there was no thrombosis. The difficulty in these cases is to say whether the pus is in the temporo-sphenoidal lobe or the cerebellum, but is partly obviated by the method of Dean, who makes an opening that will serve in either case, one and one-fourth inches behind and one-fourth inch above the center of the external meatus; this opening exposes part of the lateral sinus and, being slightly enlarged upward, permits incision of the dura and exploration of the temporo-sphenoidal lobe; enlarged downward and backward, it shows the whole diameter of the lateral sinus, and, on cutting the dura, the cerebellum.

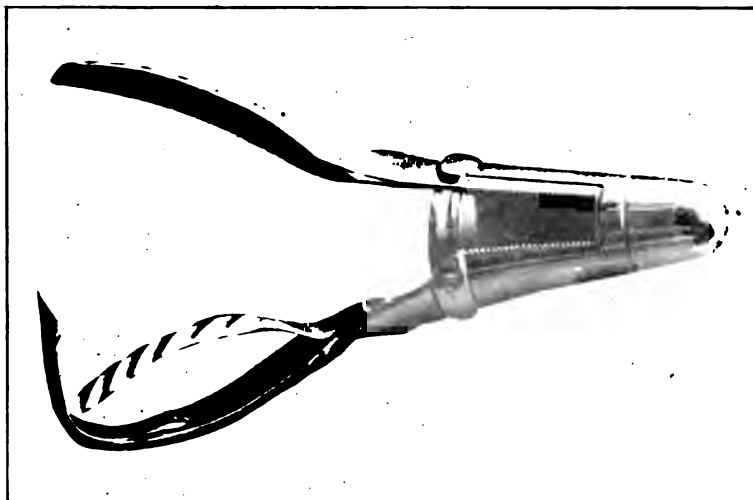
NEW INSTRUMENT
A NEW PILE CLAMP.

BY THOS. CHAS. MARTIN, M.D.,

Lecturer on Diseases of the Rectum in the Cleveland College of Physicians and Surgeons.

Without general anæsthesia piles may be painlessly removed by means of this clamp, which may be briefly described as follows: The instrument consists of a hollow cone three and a quarter inches (8.35 cm.) in length and three quarters of an inch (1.90 cm.) in

PLATE I.



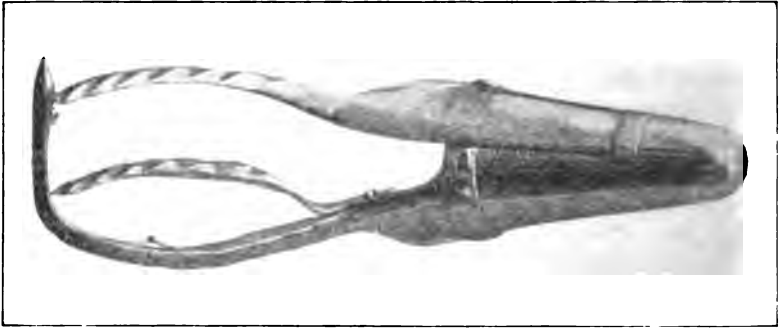
diameter at its distal extremity, and one and three quarter inches (4.44 cm.) in diameter at its proximal end. One quadrant of the cone is fenestrated (Plate IV.); this is occupied by a movable blade with a serrated edge which contacts with the serrated cone edge (Plate II.). The movable blade is sheathed in the cone when the jaws of the clamp are separated (Plate I.).

This clamp is an aseptic instrument (Plates IV. and V.).

The technique of the operation involves the following several

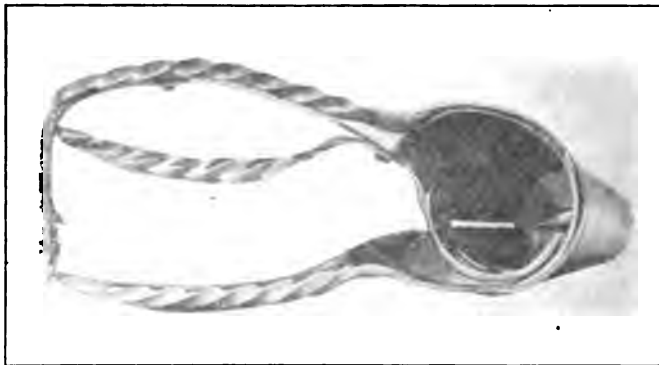
steps: (1) Hypodermic injection of about 10 minims of one-tenth of one-per-cent. solution of cocaine into the ectal and ental sphincters to secure their painless dilatation; (2) introduction into the anus of the closed clamp with the blade directed toward or against the tumor;

PLATE II.



(3) separation of the clamp's jaws; (4) hypodermic injection of the cocaine solution (*a*) into the membrane covering the now accessible tumor base, and (*b*) into the connective tissue composing the tumor; (5) clamping the pile; (6) cutting away the pile; (7) intermittent ap-

PLATE III.

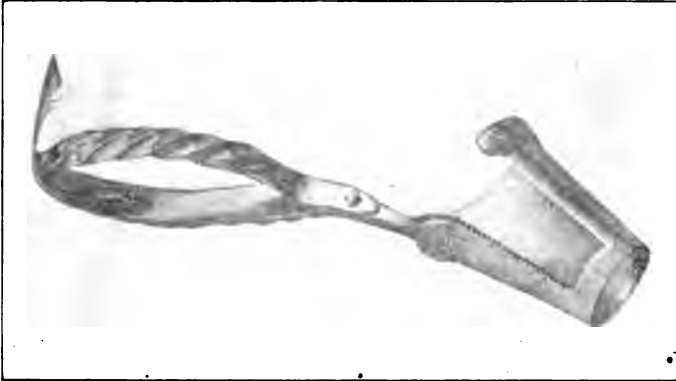


plication of Paquelin's cautery to the pedicle, and (8), (*a*) releasing the pedicle, and (*b*) withdrawal of the clamp.

Because of its peculiar form the clamp effectually blocks the field of operation against the accidental invasion of the fæces or other intestinal detritus.

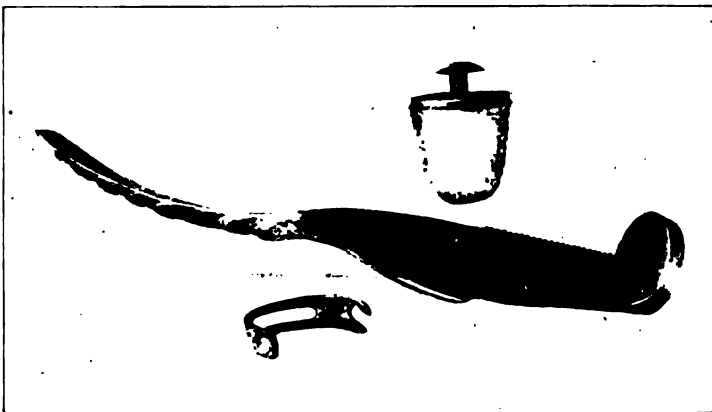
By means of this clamp the surgeon skilled in the use of the hypodermic syringe for obtaining local anæsthesia may with but trifling discomfort to his patient, successfully remove the largest internal

PLATE IV.



hæmorrhoid. Two hundred minims of one-tenth of one-per-cent. solution of cocaine, prepared from Wythe's $\frac{1}{10}$ -grain cocaine tablets, are sufficient for the removal of tumors of great size. More than

PLATE V.



three-quarters of the quantity of the solution used is recovered with the removal of the tumor, hence the amount of cocaine which may enter into the patient's circulation is infinitesimal and inappreciable.

This operation usually requires not more than three- or four-days' detention of the patient within doors—the first day in bed, the second on a couch, on the third he is allowed the liberty of the house, and on the fourth a saline cathartic, possibly an enema, after which, the patient may receive his dismissal.

A description of the auxiliary equipment used in the operation with a report of cases will be subsequently published.

The clamp was made by the J. F. Hartse Co. of Detroit, and by Mr. Thos. LeCras, surgical instrument maker, 254 Euclid avenue. The maker has agreed that clamps of his manufacture shall be submitted to the designer's inspection before they are sent from the shop.

1077 Prospect street, Cleveland.

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CLOSURE OF VESICO-VAGINAL FISTULÆ FOLLOWING
VAGINAL HYSTERECTOMY AND OTHER
OPERATIVE PROCEDURES BY THE
VAGINAL ROUTE.*

BY CHARLES P. NOBLE, M.D., PHILADELPHIA.

Surgeon-in-Chief, Kensington Hospital for Women.

The reports of all operators having a large experience with operations by the vaginal route, more especially vaginal hysterectomy and anterior colpotomy, contain references to the formation of post-operative urinary fistulæ. The more common fistula is that between the bladder and vagina, and is usually due to laceration of the bladder-wall when it is stripped off from the anterior wall of the cervix and uterus. Doubtless also when clamps are used, or when the cautery is used in cutting through the vaginal walls, it is occasionally caused by sloughing either from the pressure of a clamp or from the too widespread action of the cautery. Less common is the occurrence of uretero-vaginal fistulæ caused by the cutting or crushing of the ureters. The closure of these fistulæ is rendered technically difficult because of the fixation of the parts following the removal of the uterus, and in cancer cases because it is impossible to use the structures usually employed in their closure. The following is the history of a recent case which has some under my notice:

The subject of this report is Mrs. B., a widow, aged 61, the mother of twelve children. She enjoyed good health, and had no local disturbance until the summer of 1897, when she had some pelvic discomfort characterized especially by itching. At this time there was very little discharge. During April, 1898, there was some

* Read before the Philadelphia Obstetrical Society, October 6, 1898.

leucorrhœal discharge with sufficient discomfort to cause her to consult her family physician, who made local applications for a number of weeks, and then referred her to a prominent Washington gynecologist, who removed the uterus for cancer of the cervix on June 14th, by the clamp method. The cancer had already made extensive progress, and the prognosis was looked upon as unfavorable. Almost immediately after the operation the urine began to flow per vaginam.

Mrs. B. came under my care in August. The opening into the bladder was large enough to admit three fingers, and involved the vesico-vaginal septum, and also that portion of the bladder originally immediately in front of the supravaginal cervix. The cavity left after the removal of the uterus had not entirely filled up, so that the fistulous opening extended considerably above the level of the vagina. The edge of the vaginal wall on the right side was distinctly cancerous, rendering it probable that the adjacent bladder wall would become involved at an early day. This fact determined me in favor of immediate operation, although the parts were still fixed as a result of the recent hysterectomy.

Closure of the bladder fistula was made on August 8th. The operation was technically difficult. Owing to the involvement of the vagina, it was essential to dissect the bladder loose from the vagina, and to close the bladder walls only, leaving the vaginal opening undisturbed. In order to accomplish this it was necessary not only to detach the bladder from the vagina in front, but also to separate the bladder from the subperitonæal connective tissue, and to separate it from the broad ligaments about the point of insertion of the ureters. This part of the operation was rendered especially difficult by the fixed condition of the parts, and by the fact that the vagina was small owing to the post-climacteric atrophy. The fistula was closed with catgut and silkworm-gut sutures. The bladder was drained with Sims' self-retaining catheter. On the tenth day, when the sutures were removed, healing was apparently perfect, and yet it was evident there was a point of leakage, as some drops of urine could be seen trickling down into the vagina. The drainage-catheter was used for five weeks, at the end of which time the bladder was soundly healed.

The two points of special importance in connection with this case are, the principle of closing the bladder itself without closure of the vaginal walls, and second, the prolonged use of the drainage-catheter. Closure of the bladder itself independent of the vaginal walls has been practised by Sanger, Walcher, Mackenrodt and Kelly, various

methods being employed to accomplish this result. This is a most important principle added to those which have heretofore governed our work in the closure of vesical fistulæ. In my opinion, in a given case, the best plan of procedure is to separate the bladder from the adjacent structures wherever this can be most easily accomplished, whether at the side or behind. The points to be avoided are injury to the ureters and opening the peritonæal cavity. The direction of the line of suture, whether antero-posterior, transverse, or diagonal, should depend upon the conditions present in the individual case. It will usually be best in such cases to close the fistula with a fine running catgut suture, and to reinforce this by interrupted sutures of chromicized catgut or silkworm gut.

The value of the drainage-catheter in securing the closure of minute openings in the line of union is well illustrated by this case. Emmet and others observed that in recent fistulæ formed after labor the healing process would go on spontaneously if the patients were kept at rest and the parts kept clean by frequent douches. The size of the fistulæ in many cases was greatly reduced by this process. The above case, and two others which have come under my notice, have led me believe that in small fistulæ the use of the drainage-catheter, in addition to rest and cleanliness, will not infrequently bring about healing. The second case was one upon whom vaginal ovariectomy was done through an anterior colpotomy incision, in Berlin. There resulted a vesico-vaginal fistula. This was operated on twice in Berlin, once by the original operator, and once by his assistant. It was then operated on in Wilkesbarre, and finally by myself. As a result of the original operation and the three fistula operations, the entire vaginal wall in the region of the fistula was a mass of cicatricial tissue. When the sutures were removed after the operation which I did, it was found that healing was imperfect at one point, and that an opening, perhaps one-eighth of an inch in length, existed. The drainage-catheter was kept in and the patient directed to lie on the side opposite to that on which the opening existed, and within a few days the fistula closed.

A more marked result of the effect of the drainage-catheter came under my notice within the current year. I was called upon to operate in a case of cancer of the cervix for the relief of hæmorrhage and foul discharge. It was intended to scrape away the necrotic tissue and to cauterize the base of the cancer with an electric cautery. On curetting out the necrotic tissue it was found that the bladder was encroached upon, and in using the galvano-cautery the

vesical region was avoided. Nevertheless at the end of a week the urine came away by the vagina, showing that the bladder wall had sloughed. A drainage-catheter was introduced, with little expectation of a good result, but at the end of ten days the vesical opening had healed.

These cases are brought before the Society to emphasize the value of the principle of closing the bladder independently of its vaginal connections, and also of the importance of a drainage-catheter in securing the closure of small vesico-vaginal fistulæ, provided the catheter is used immediately after their formation.

GONORRHŒA IN THE FEMALE: RECTAL COMPLICATIONS.*

BY JOSEPH B. BACON, M.D., CHICAGO.

It is very well known that authorities upon rectal diseases have little to say on the subject of gonorrhœa of the rectum. It is true, they speak of it as occurring and recommend some simple method of treatment, without going into the pathology or the results of gonorrhœa. It is very uncommon in our country. I have seen only two cases in the male. Most of them have been in females, where I could trace it directly to the nurse in using the same syringe for an enema as was used for vaginal douches. I understand it is comparatively common in France and other foreign countries. In my personal experience I have seen serious results from gonorrhœa. It is now conceded that in gonorrhœa of the rectum we have the columnar epithelial lining of the follicles involved, and the glands elsewhere, since Wertheim demonstrated that it not only involves the mucous membrane of the bladder but submucous tissues and the muscular structures and walls of the bladder. We even find it in the veins external to the muscular coats of the bladder. We have no reason to doubt, although it has not been well established, that ischio-rectal abscesses or that pelvic peritonitis occur at the same time a patient has gonorrhœa of the rectum or the vagina, and that sometimes pelvic peritonitis may be due to gonorrhœal extension from the rectum instead of from the uterus and Fallopian tube.

As to the dangers of gonorrhœa of the rectum, the disease probably results in seventy per cent. of the cases in the formation of stric-

* Read before the Chicago Gynæcological Society, May 20, 1898.

ture of the rectum. The best authorities upon rectal diseases have claimed only that about eighteen per cent. of strictures of the rectum are due to syphilis. Formerly it was claimed that fifty or more per cent. of the cases were due to syphilis. They are becoming more and more convinced that strictures of gonorrhœal origin are produced in this way. In gonorrhœal infection of the rectum the follicles as well as the glands are involved in the pathological process, and an ulcer forms. When an ulcer forms in the rectum it is impossible to cleanse the parts by any method of treatment, so that the ulcer having once formed in the rectum becomes chronic; new fibrous tissue is formed as the result of inflammation in the neighborhood of the ulcer, the chronic inflammation produces hyperemia of the fibrous tissue in the vicinity of the rectum also. The chronic irritation at the seat of the ulcer upon the nerves adjacent produces a spasm of both the circular and longitudinal muscular fibers in that locality, and this spasm being continued indefinitely, finally the muscle from over-stimulation dies, and, according to Cripps' idea, we have two pathological conditions that produce strictures of the rectum. The reason we have not found more cases of gonorrhœa of the rectum is easily explained. According to the statistics from the large hospitals in London strictures of the rectum in females are ten times as frequent as in males; hence, we can readily see how these strictures would be produced by careless people, particularly the lower classes of people, who never stop to think when they have a gonorrhœal vaginitis, but use a syringe which infects the rectum. Again, if the patient has gonorrhœa extending to the endometrium, then into the Fallopian tubes and developing a pelvic peritonitis, the pain from the inflammation and ordinary symptoms of gonorrhœa in the rectum are so much less intense that the attention of the physician is rarely called to the matter. On the other hand, an intense pain in the pelvic peritonæum would call the attention of the physician to it and an examination would be made. In many cases the rectum is overlooked. The methods of the last few years in matters of diagnosis are so accurate that the future will give us more exact statistics.

The treatment of gonorrhœa of the rectum does not differ materially from that given to any other part. The rectum has an absorbable mucous membrane, so that liquids can be taken up as readily by it as by the stomach, and it is dangerous to use bichloride or the different antiseptics. A better plan of treatment is to keep the patient at rest and to use a double tube just within the sphincters for irrigation purposes, gradually inserting the tube slowly with an

outlet for the flow of water to prevent washing or carrying the infection higher up in the intestinal tract. The bowel should be thoroughly irrigated several times a day with hot water. You can use the milder forms of antiseptics, but there is always danger of absorption. There is another reason why gonorrhœa of the rectum is so often overlooked. Except for the first few days, while it is acute, there will be a red, swollen, and inflamed condition of the parts, and a burning pain with diarrhea from the extra secretion. If the ulcer is above the sphincter muscles we have to do with the sympathetic nerves, and the patient may not complain of much pain. If the ulcer is within the course of the sphincter muscles or near the anus or anal canal, then the pain from the nerves is intense. Such patients will require occasionally an anæsthetic. The anal ulcer is to be treated by divulsing the sphincter muscles, efforts being made to overcome the spasm, and then treating the ulcer locally the same as we would an ulcer elsewhere.

I remember distinctly a case that had been treated for cystitis for three weeks, and after irrigating the bladder the physician treated the symptoms by giving internal medication. As soon as I examined the urine I made up my mind that the bladder was not involved. In making an examination of the rectum I found an anal ulcer and reflex symptoms. You get these symptoms sometimes where there is no pain, where an ulcer in the anus does not occur perhaps in one case out of twenty. The pain is being reflected back by the sacral plexus or pudic nerve, and the result is we have pain in some other branch of the sacral plexus of nerves instead of at the seat of the ulcer. This is a practical point to remember but one which is frequently overlooked. When we have a case of extreme spasm of the neck of the bladder, I do not care what the case is, it is a good idea to see if we have an ulceration within the sphincter.

THE CO-EXISTENCE OF FIBROMYOMA AND CARCINOMA
IN THE UTERUS, WITH A REPORT OF
THREE CASES.*

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From the former belief in the malignant epithelial degeneration of the benign connective-tissue tumor, a more modern tendency has arisen to consider these two classes of growth as entirely distinct and as without interdependence. While we no longer believe in the carcinomatous degeneration of the myoma, the coexistence of myoma and carcinoma in the same organ retains a clinical and pathological interest that seems to be frequently ignored.

A study of three very recent cases, in which these tumors were associated, has prompted this reference to the association in the uterus. Even admitting, with a recent author (Kelly, "Op. Gyn." vol. II., p. 381), that this association in the uterus is merely a coincidence and that the growth of the one tumor is without influence upon the growth of the other; a sufficient interest remains from the diagnostic standpoint alone. But it is with a feeling that we should not too hurriedly abandon the older view that fibromyoma may predispose to carcinoma in the uterus that the following cases are presented. They are from the practice of Dr. Charles P. Noble, to whom I thankfully acknowledge indebtedness for the privilege of their study and report.

As we especially desire to emphasize the association, and as the neoplasms obviously present structural features similar to those found in the unassociated growths; an elaborate pathological description is deemed unnecessary.

Briefly the cases are as follows:

Case I.—Miss E. T., white, American, æt. 60; had lost her mother and a sister from cancer of the uterus. She had menstruated regularly and had passed the menopause at 51. Two years ago a slight leucorrhœa, straw-colored, was noticed, which became more profuse and was nearly constant; but apparently was never very offen-

* Read before the Philadelphia Obstetrical Society, by invitation, October 6, 1898.

sive. For this she was ineffectually curetted last year and again this. The scrapings were reported to be cancerous.

An abdominal panhysterectomy was performed September 9, 1898, from which the patient is now convalescent.

The specimen shows a uterus somewhat enlarged by the presence of an interstitial fibromyoma in the fundus, which measures four and one-half by three cm. The uterine cavity is enlarged, excavated and shows irregular papillary projections from the endometrium. The cervix and appendages appear to be uninvolved.

The microscope shows the endometrium of the body to be ramified by irregular acini of the glandular type which are irregularly lined or choked with cells of a columnar pattern.

The acinous epithelial invasion is more pronounced near the uterine cavity but involves the adjacent uterine tissue. Round-cell infiltrations and areas of extravasated blood are to be noticed, the latter a probable result of the preparatory curetting.

The diagnosis is adeno-carcinoma of the corpus uteri, associated with interstitial fibromyoma of the fundus.

Case II.—Mrs. M. H., white, American, æt. 63; a multipara, had passed the menopause and was vigorous until about one year ago, when irregular hemorrhage from the vagina and uterine pain developed and proved progressive.

Physical examination showed a large, unhealthy cervix, a fungus mass filling the os and bleeding upon pressure. A diagnosis of cancer was made; but sufficient infiltration was found in the broad ligaments to preclude hysterectomy.

The cervix was therefore removed by the curette and cautery; this procedure unfortunately opening up the cul-de-sac of Douglas. The patient sank after the operation and two days later died.

The uterus was removed post-mortem, and was found to be moderately enlarged. Inferiorly it shows the rough, irregular surface where the diseased cervix had been scraped away. On section a small globular submucous fibroid 1 cm. in diameter was found near the internal os.

The microscope shows an invasion of the remains of the cervix and lower uterine tissues by compact irregular masses and strings of cells of the squamous epithelial type. These cells are markedly irregular in size and in staining capacity.

Areas of intense round-cell infiltration; in places invading the capsule of the fibromyoma are present. An epithelial invasion of the

benign tumor, a condition which has been recorded a number of times, is not observed.

Diagnosis: squamous epithelioma of the cervix uteri, associated with a small submucous fibromyoma.

Case III.—Miss B. H., æt. 48, English; had lost an aunt of carcinoma, and two sisters of phthisis. The patient, although much overworked and overworried during the past ten years, had passed the menopause and had enjoyed good health until one and one-half years ago, when a hemorrhagic discharge from the vagina developed and progressed. Two months ago it became offensive. Severe bearing-down pains, radiating from the inguinal regions down the legs were associated. An obstinate insomnia is present.

On September 15, 1898, the patient was etherized and the uterus curetted. The curette entered the uterus to a depth of four or five inches. A large amount of material was removed. The individual scrapings being irregular, large (frequently one or two centimeters in diameter), rather firm and fibrous, and of a pale grayish-yellow color.

The clinical diagnosis was sarcoma or degenerated fibromyoma.

The microscope, however, revealed the typical alveoli of adenocarcinoma, separated by a moderate amount of stroma.

A panhysterectomy was performed September 22, 1898, after renewed curetting. After a severe illness of eight days the patient died. A post-mortem was not had.

The uterus is decidedly enlarged, being about twelve cm. in length and six cm. in breadth. The fundus is occupied by a fibromyoma about four cm. in diameter. Below this is the large, red, rough and excavated cavity of the uterus. The entire cavity apparently being lined by infiltrated tissue. Much of the diseased tissue has of course been removed by the vigorous curettage.

Diagnosis.—Diffuse adenoma carcinoma of the uterine body. associated with an interstitial fibromyoma of the fundus.

It will be noticed that two of these three cases showed the comparatively rare cancer of the body, and only one the common epithelioma of the cervix. That this is not exceptional, is shown by others. Jessett ("Cancer of Uterus," p. 73) states that adenocarcinomas are frequently associated with fibroids. He gives the history of two patients with uterine adenocarcinoma, one of whom, a multipara, had coexistent fibroids. Williams ("Cancer of Uterus," pp. 83-93) describes seven cases of cancer of the body of the uterus, two of which showed associated fibroids; while in a third case a

uterine polyp had been removed five years before. In one of the cases the epithelial growth had penetrated the fibroid.

Stone (*N. Y. Med. Journ.*, July 27, 1895) gives four cases of malignant adenoma of the uterus in which the uterus was inspected. One of these cases had associated subperitoneal and interstitial fibroids. Kelly ("Op. Gyn.," vol. II., p. 380) refers to a review of one hundred cases of uterine carcinoma, in eight of which myomas were coexistent. Of the eight, six were adeno-carcinomas of the body, one an adeno-carcinoma of the cervix and but one an epithelioma of the cervix. With this we should consider the relative infrequency of carcinoma of the body. Shroeder (*Hofmin Zeitschrift f. Geb. v. Gyn.*, Bd. x) estimated that only 3.4 per cent. of uterine cancers originate in the corpus. The results of Cullen's examination of seventy-six of Kelly's cases of uterine cancer are recent and appear to more accurately express the relative frequency. Of the seventy-six cases (Kelly, "Op. Gyn.," vol. II., p. 311), fifty-two (68.4 per cent.) were epitheliomas of the cervix, thirteen (16.8 per cent.) adeno-carcinomas of the cervix, and eleven (14.4 per cent.) adeno-carcinomas of the body of the uterus.

If we believe with Garrigues ("Dis. of Women," p. 454) and others, that twenty per cent. * of all women over thirty-five have uterine fibromyomata it is to be expected that a certain per cent. of these women, along with others, will develop the prevalent uterine cancer. The association here being a mere coincidence. To maintain, however, that the association is always coincidental requires an explanation of the apparent great preponderance of the association with the comparatively rare corporeal carcinoma over the association with the very common cervical epithelioma. Although adeno-carcinoma of the body usually occurs somewhat later in life than the latter, we have little reason to think that fibromas originate after the menopause. The fact that both fibromas and adeno-carcinomas of the body of the uterus are common in the nulliparous would explain in part; yet both affections are sufficiently common in the multiparous to make the explanation seem but partial. With the insufficient statistical data at hand there yet seems to be a sufficient suggestion that fibromyoma may predispose to adeno-carcinoma of the corpus to urge the study and the record of other cases. On the other hand, there is little to suggest that the epithelioma is associated other than by coincidence with the benign tumor.

* Penrose in five hundred and four coeliotomies found seventeen per cent. of fibroids. Penrose, "Dis. of Women," p. 233.

The endometrical changes, especially the glandular hyperplasia pointed out by Wyder and Von Compe (*Archiv f. Gyn.*, B. xxix, p. 318, 1887), and the vascular and the mechanical irritative effects produced in the uterus by the presence of fibroids would appear to lend color to the theory of a predisposition in the former case.

Diagnostically the error is usually the unimportant one of overlooking the benign tumor. Occasionally, however, the hemorrhage and discharge is ascribed to the fibroma alone; the carcinoma being unsuspected. This error is of course more liable to happen with carcinoma of the body, and it has led to such operations as myomectomy, the removal of the appendages alone, the extirpation of uterine polypi and other futile procedures. Kelly mentions four instances of this error ("Op. Gyn.," vol. II., p. 311). Its possibility indicates the importance of a routine examination of the endometrium, removed by the sharp curette or otherwise, in all cases of elderly women who have fibroids with symptoms, especially if these be associated with discharge, odor, or other suggestion of malignancy.

I think we may conclude:

1. That the frequency of association of fibromyoma with adenocarcinoma of the corpus uteri, is greater than would be, a priori, expected and relatively much greater than with the more common epithelioma of the cervix.

2. That a coincidence of the two growths is favored by their individual proneness to affect the nulliparous; but that the frequency of the association seems greater than is thus explained, or than is explained by the frequency of fibromyomas in all uteri after middle life.

3. That the endometrial hyperplasia and the congestive and irritative influences produced by fibromyomas would seem to favor the development of the malignant tumor.

4. That further investigation is desirable before the old theory that fibroids predispose to cancers in the uterus is considered as disproved.

5. That the occasional serious errors of diagnosis from this association renders the routine examination of the endometrium desirable in elderly women with fibroids and imperative when there is excessive or odorous discharge, or abundance of scrapings.

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SURGERY OF THE PERITONÆAL CAVITY.***BY EDWARD NICHOLAS LIELL, M.D., JACKSONVILLE, FLA.,****Late Lecturer on Gynæcology, New York Polyclinic, and Gynæcological Surgeon to St. Elizabeth's Hospital, New York.**

In this brief paper, having reference to a number of unusual cases drawn from an extended experience in gynæcological surgery, I intend merely to bring out salient points associated with the various surgical procedures and their findings. Many questions regarding pelvic surgery are complex: thus cellulitis, as applied to pelvic inflammation, is but an accompaniment of various existing pathological conditions, which from their very nature and character, in the majority of instances, necessitate the calling in of the abdominal surgeon.

With the education of one's fingers surgery of the peritonæal cavity loses its terrors, one's skill is enhanced and results correspondingly favored. A proper diagnosis determines the method of procedure, whether abdominal or vaginal.

In vaginal section, the educated finger is one's guide as in the more extended abdominal section; in fact, the knowledge acquired through the latter procedure led to the revival of the vaginal route for the surgical treatment of pelvic disease. Whatever the route selected, clean and thorough surgery are necessary for the cure of the patient.

When I first performed hysterectomy, constriction by elastic ligature or Koerbele's ecraseur, and the use of steel skewers, with extra-peritonæal treatment of the stump of the cervix, was the method generally adopted. This was termed supra-vaginal amputation. A second method was amputation at the cervix, with intra-peritonæal impacement of the stump. Within the past few years these have practically given place to total extirpation of the uterus and adnexa, an operation seemingly more formidable and difficult. This, however, is more than counterbalanced by the complete results obtained. Through preliminary ligation of the ovarian and uterine arteries in their course in the connective tissue of the broad ligaments the operation is rendered comparatively bloodless.

* Read at the Twenty-fifth Annual Meeting of the Florida Medical Association, held at Jacksonville, April 26 and 27, 1898.

In performing total extirpation of the uterus, either the abdominal or vaginal route may be selected, the operation being one of election as to the pathological conditions presenting. It is due to the French surgeons, through a perfected technique, that the vaginal method of operating on the pelvic organs has attained its present perfection. This may be said of Pean's procedure of morcellement applicable to large fibroids, and to Segond and Jacobs regarding total extirpation for suppurating appendages.

In an article on a comparison of the known advantages and disadvantages of vaginal *vs.* abdominal hysterectomy, published in the *New York Polyclinic Journal*, November 15, 1896, I stated that the advantage of doing a total extirpation by the abdomen is, that, by means of the Trendelenburg position, the eye plays a part equal to that of the finger, the field of the operation is in full view, and the ability to deal with every phase of supra-pubic complication readily admitted. Regarding the rapidity of operation by the vagina with the use of clamps, compared with ligatures, when operating through the abdomen, the sloughing process, with accompanying discomfort and pain in the use of and removal of the clamp-forceps, must be considered in the after treatment of vaginal hysterectomy.

Tumors of whatever size or character, if complicated by extensive adhesions, should be removed through the abdomen, the same being the case with cancer of the uterus because of its tendency to invade surrounding tissue, this necessitating complete removal of the parts affected and even beyond if possible.

The arrest of growth as well as of hæmorrhage from fibroid tumors of the uterus, through the removal of the tubes and ovaries, is an operation seldom performed at present, the comparative results between this and hysterectomy being decidedly favorable to the more radical operation. It is a mistake to regard change of life as inducing relief to a suffering woman, or that there will be a gradual reduction in size of the growth because of a menopause induced through the removal of the tubes and ovaries. The experience of gynæcological surgeons at present accord the belief that uterine myofibromas, while not malignant, are not of such benign character as heretofore supposed, since degenerative changes frequently occur, many assuming a fibrocystic, if not a sarcomatous character, while others are attended with complicating ovarian and tubal disease. The importance of diagnosis and early operation is therefore indicated.

In adipose women and those with pendulous abdomen I have

adopted the following method of closing the abdominal incision: The peritonæal edges are brought together first by interrupted Lembert sutures, medium-sized catgut being used. The muscle and fascia are then drawn together next by a second line of sutures of heavier catgut. The fatty portion of the incision remaining is then left open to close by new granulating tissue, the wound being packed with moist aseptic gauze.

Morphine I rarely use after operation, its tendency to diminish peristaltic action and thus adding to possible tympanitis being a decided objection to its use. If pain be severe I prefer $\frac{1}{2}$ -grain Codein tablets. The morning following operation measures are employed towards inducing free evacuations from the bowels as rapidly as possible to overcome the tendency towards intestinal inertia.

I desire now to call attention to the following cases in short detail, illustrative of the foregoing:

Case I.—Mrs. McG., aged 34. Abdominal section for tubo-ovarian abscess, size of foetal head; right side; adhesions general; latter separated and mass removed whole; ligature of broad pedicle with silk, chain-link; irrigation of abdominal cavity with diluted peroxide of hydrogen; adipose abdomen; incision closed as referred to above; convalescence uninterrupted; temperature 102.4° F. at time of operation.

Case II.—Mrs. H., aged 63. Suppurating ovarian cyst, multilocular, left side. Operation one of emergency. Temperature 103° F. Patient considerably weakened. Adhesions extensive to the abdominal wall, omentum, and intestines, not readily broken up. Contents of cyst fully one and one-half gallons of a grumous, suppurating character; weight of sac, contents, etc., removed, forty-two pounds, patient's normal weight having been ninety-six pounds. The sac could not be entirely removed so the edges of the portion of sac not removable were drawn up and sutured to the abdominal incision, the cavity then packed with strips of iodoform gauze and the abdominal incision closed in part. Reaction from operation good, the patient making a slow but thorough recovery. The gauze dressings were renewed every second or third day as the conditions of drainage required, the walls of the sac uniting and the wound closing some seven weeks subsequent to operation. This patient gave a history of tapping of the abdomen for probable ovarian cyst six months previous to operation. The temperature was due to sup-puration of the cyst contents undoubtedly the result of tapping. The same may be said of the adhesions being so general.

Case III.—Mrs. W., aged 52. Total extirpation for cancerous disease of the uterus. History of a discharge of an ichorous character with very disagreeable odor for nearly two years; frequent attacks of hæmorrhage from diseased tissue. Subsequent to operation the microscope bore out the diagnosis. The disease returned in vaginal tissue within two years and was inoperable. The total extirpation gave the woman a new lease of life however for nearly two and one-half years.

Until eight or ten years ago the method of treatment of this condition was high amputation of the cervix, with subsequent applications of chloride of zinc or other powerful caustics to the open wound, its good results, however, following only on epitheliomatous degeneration of the *lower* portion of the uterus. The gain thus made as well as the results attained through the present operation of total extirpation is a forward and a marked one.

Case IV.—Mrs. Y., aged 43. Total expiration of the uterus for multiple fibromata, the combined size of which being that of a child's head. The question of metrorrhagia, pain, and pressure symptoms entered into this case considerably for two years previous to operation. Considerable shock, in part due to the disturbance and free handling of the intestines, followed the removal of so large a fibroid. Result obtained excellent; patient's general health decidedly improved.

Case V.—Miss S., aged 26. Double pyo-salpingitis, gonorrhœal, with matting together of intestines, uterus, and vermiform appendix; mass on left side the size of a lemon; on the right side S-shape, the distal end being the size of an orange; adhesions broken up; pus-tubes and ovaries removed; appendix dissected out and amputated; abdominal cavity freely irrigated with saturated solution of boracic acid. Abdominal section preceded by thorough curettage of the uterus.

Case VI.—Mrs. W., aged 42. Appendicitis, fulminating suppurative; complicating ovarian cyst. General matting together of intestines, omentum, and right broad ligament, as also to abdominal wall, by fresh protective lymph exudate. Fully one-half pint of pus welled out when incision was made into the freshly formed sac; adhesions broken up and in great part removed, the appendix sought for, found perforated, considerably thickened, and of unusual size, being over six inches in length; appendix finally freed, ligated close to the cæcum and amputated. On the outskirts of this mass of adhesions and partly adherent was the right ovary, cystic, the size of a lemon,

which, with the tube, was removed. Abdominal cavity and intestinal peritonæum thoroughly irrigated with diluted hydrogen peroxide and the abdominal incision closed without drainage. Considerable shock during and subsequent to operation, the patient, however, making a good recovery. Temperature $103\frac{1}{2}^{\circ}$ F. at time of operation. Apropos to the question of the appendix, in the *American Medico-Surgical Bulletin*, November 10, 1897, and following upon an article by Memdé, on "Perityphlitis and Appendicitis in Their Relation to Obstetrics and Gynæcology," I made mention of the fact that it has been my good fortune to have palpated the normal appendix in three patients, in one of which subsequent abdominal section for a pelvic complication proved it to have been the appendix.

Case VII.—Mrs. N. D., aged 23. Cystic degeneration of ovaries, prolapsed and adherent; uterus completely retroverted, adherent. History of metroperitonitis following miscarriage eighteen months previously. Menorrhagia and hystero-epileptiform attacks preceding and during first day of menstruation for some six years. Abdominal section, adhesions broken up, and ovaries and tubes removed. Ventro-fixation of uterus. No subsequent return of convulsive seizures and menorrhagia but slight. The result obtained in this case shows the possibilities of oöphorectomy in hystero-epileptiform seizures.

Case VIII.—Miss E., aged 28. Abdominal section, in part exploratory. Diagnosis of adhesions to the bladder on left side. Retroversion of the uterus complete. Contracted bladder, latter retaining but two ounces of urine. Section developed a congenital malformation, there being a contracted peritonæal band between the bladder and uterus, the complete retroversion causing a tension on the bladder, drawing the latter backward and practically obliterating the anterior cul-de-sac. Ventrofixation of the uterus relieved tension on the bladder, and previous irritative cystitis, vesical tenesmus, and frequent micturition almost immediately abated. Bladder retained but two ounces of urine previous to operation; subsequent treatment by divulsion of the bladder by water-pressure, the amount introduced at each séance being gradually increased until at the end of six weeks the patient held fourteen ounces of urine readily.

Case IX.—Mrs. M., aged 32. Ectopic gestation; intra-peritonæal hæmorrhage, due to rupture of sac about the tenth week. Abdominal section twenty-four hours subsequent to outset of sudden acute pain and collapse. Peritonæal cavity contained a mass of extravasated clotted blood, hæmorrhage ensuing upon attempt at removal. A

slightly formed foetus, with decidual tissue was found, indicating the cause of hæmorrhage. The whole mass, including the broad ligament was ligated and removed, the peritonæal cavity irrigated with normal salt solution and the abdominal incision closed. Though considerably exsanguinated, the patient rallied well under high rectal injections of normal salt solution and stimulating hypodermics. This patient gave a history of practically missing two menstrual periods, therefore a diagnosis of probable ruptured tubal pregnancy was made. This is a type of intra-peritonæal rupture, and is almost invariably fatal if surgical interference be not immediately resorted to.

A CLINICAL AND PATHOLOGICAL STUDY OF FIVE RECENT CASES OF HYSTERECTOMY FOR FIBROMATA.*

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The five cases which form the basis of the present paper were operated upon at the Post-Graduate Hospital during the month ending June 3d. The series is not remarkable for the great size of the growths removed, nor for the technical difficulties of the operations. The cases have been grouped in order that the specimens might be more intelligently considered and with the hope that the clinical and pathological features of the cases might elicit a better discussion.

I am indebted to Dr. Zeit of the Post-Graduate Hospital for careful microscopical examinations of the specimens.

Case I.—Multimodular uterine fibroid with left tubo-ovarian abscess. Panhysterectomy. Recovery.

B. W., aged 25, colored, widow. Referred by Dr. C. H. Bryan. Patient's family history is negative. Menstruation began at the age of 13, and has always been regular and painless. She has never been pregnant. Three weeks ago she was seized with acute pains across the abdomen and has been confined to bed ever since. She has had a constant vaginal discharge of a very offensive odor, and has had a number of chills followed by fever.

Examination of the abdomen showed a hard, tender mass extend-

* Read before the Chicago Gynæcological Society, June 17, 1898.

ing some three inches above the pubes. The tenderness is more marked on the left than the right side. Vaginal examination shows the cervix pushed upward and to the right. There is a hard, tender mass in the posterior cul-de-sac.

Diagnosis: Uterine fibroid, possibly complicated by pyosalpinx.

Operation.—May 3, 1898. The abdomen was opened by an incision six inches in length in the median line, extending from the pubes to the umbilicus. The patient was placed in the Trendelenburg position and the bowels protected by abdominal pads. There was a large pyosalpinx on the left side, densely adherent to the uterus, omentum, and bowels. The adhesions were separated with great difficulty and during the enucleation an abscess of the ovary was ruptured. The right tube and ovary were greatly thickened and densely adherent. The broad ligaments were tied off down to the uterine arteries with catgut. Anterior and posterior peritonæal flaps were then made and the uterine arteries tied. The cervix was severed from the vagina and the cut edge of the latter was sewed with a running catgut stitch. The abdomen was thoroughly irrigated with salt solution and gauze was packed in the pelvis, the end being led out through the open vagina. The abdominal wall was sutured in three layers, fine catgut being employed for the peritonæum, chromicised gut for the fascia, and silkworm gut for the skin. The patient was somewhat shocked at the close of the operation, but responded to subcutaneous injections of salt solution. The foot of the bed was elevated eighteen inches for thirty hours for the sake of drainage. The gauze was removed at the end of the fourth day. The patient made an uninterrupted convalescence.

Examination of Specimen.—Left tubo-ovarian abscess with cyst of the broad ligament. The tube measures thirteen centimeters in length and contains numerous pockets. Many inflammatory bands exist between the tube and the uterus. Thick, yellow pus is contained within the tube. The right tube measures five centimeters in diameter, and nine centimeters in length. The wall is greatly thickened. The interior contains no pus. Scattered over the uterus are five subserous fibroids varying in size from three to five centimeters in diameter.

Microscopical examination of right tube. Salpingitis and hyperplasia; densely infiltrated mucosa. Infiltration of muscular and serous coats, accompanied by hyperplastic changes of the whole tube. Subserous fibroid. Microscopical appearance typical of uterine myoma, with few vessels and rod-like nuclei. Bacteriological

examination of pus from pyosalpinx: Smears show diplococci morphologically identical with gonococcus, but growing on agar in six hours and decolonizing by Gram.

Case II.—Multinodular uterine fibroid containing a four-months' fetus. Panhysterectomy. Recovery.

B. W., colored, married, aged 33. Family history negative. Menstruation began at the age of 12 and was always regular and painless. Three years ago she aborted at the third month, the apparent cause of the accident being overwork. Since the miscarriage she has menstruated regularly up to two months ago, when the period was somewhat less than normal. She has had a "show" merely on one occasion since. For the past four months she has suffered from backache, headache, and pain in ovarian regions. Constipation has been extreme. She has lost considerably in flesh and strength from inability to digest her food. During the past month there has been nausea and vomiting.

Examination showed a hard multinodular uterine fibroid completely filling the pelvis and reaching nearly to the umbilicus. The largest lobe was situated deep down in the pelvis and could be made out through the cul-de-sac, resting upon the rectum. Abdominal palpation was rendered difficult by extreme tenderness.

Operation.—May 6, 1898. After the abdomen had been opened by a five-inch incision and the omental and bowel adhesions over the top of the tumor had been released, the softness of the mass led me to suspect that I was dealing with a fibrocyst of the uterus, with a large subperitonæal growth posteriorly, and it was only when the tumor was opened later in the pathological laboratory that the true nature of the growth was ascertained. The broad ligaments were ligated in the manner described in Case I., and the uterus removed entire. There was an unusual amount of bleeding from the cut vaginal walls, requiring a number of ligatures besides the over-and-over catgut suture. The anterior and posterior peritonæal flaps were sutured together with a running catgut stitch after placing a small iodoform gauze drain through the vaginal opening. In this way the pelvic cavity was completely closed and the uterine stumps being turned downward, the ovarian stumps being the only raw surfaces within the abdomen. The abdominal wall was sutured in layers, as previously described. There was no shock following the operation. The gauze was removed on the fourth day and barring an abscess of the abdominal wall, due to an unexplainable streptococcus infection, the patient made an uninterrupted recovery.

Examination of specimen.—The uterus measures sixteen centimeters in length. An incision through the anterior wall, median line, shows eight intramural fibroids, varying in size from one and a half to two and a half centimeters. Projecting from the posterior uterine wall is a large subserous fibroid ten by twelve centimeters. Tubes and ovaries are normal. The uterus contained a foetus between four and five months old.

Microscopical examination of the growths shows typical myomatous formations, with few vessels and cells with rod-like nuclei.

Case III.—*Multinodular uterine fibroid with left pyosalpinx and broad-ligament cyst of same side. Panhysterectomy. Recovery.*

T. J., colored, widow, aged 31. Family history is negative. The patient had one child twelve years ago and has never miscarried. Menstruation began at the age of fourteen and has always been regular and painless. Four years ago she had an attack of pelvic inflammation lasting two months. During the attack the pelvic pain was located mostly in the right side. She had another attack some four months ago, when she first noticed a hard lump in the lower abdomen. This tumor has increased in size ever since.

Examination shows a multinodular tumor filling the pelvis. The upper margin is some four inches above the pubes. The tumor extends further on the right than on the left side of the pelvis. A vaginal examination shows the mass to be quite immovable. The cervix is pushed upward and to the right. Examination is very painful.

Diagnosis: Multinodular uterine fibroid with pyosalpinx.

Operation.—May 27, 1898. An incision some seven inches in length was made in the median line of the abdomen. There was a large pyosalpinx of the left side, together with a broad-ligament cyst containing about a pint of clear fluid. The right tube and ovary were buried in adhesions. The mass was immovably fixed in the pelvis by dense adhesions to omentum, bowels, and sides of pelvis. Considerable dissection was necessary before the adhesions could be separated and the tumor lifted out of its bed. The broad-ligament cyst ruptured during the enucleation. The same method of operation was employed as in the previous cases. The anterior and posterior peritonæal flaps were not brought together. Gauze was packed in the pelvis and led out through the cut vagina. Through-and-through silkworm gut sutures were employed for the abdominal wall. There was very little operative shock. The foot of the bed was elevated eighteen inches for thirty hours. Patient made an uninterrupted convalescence.

Examination of Specimen.—The uterus is considerably hypertrophied, measuring ten centimeters in a transverse, and sixteen and a half inches in a longitudinal diameter. This increase in size is due to muscular hypertrophy. Scattered through the cut surface of the uterus are seven intramural fibroids, varying from one-quarter to three centimeters in diameter. Over the surface of the uterus may be counted six subserous growths, varying in size from one to six centimeters. The left tube is sixteen centimeters long and four centimeters in a transverse diameter. The interior of tube is divided by transverse bands into a number of cavities containing thick pus. There is a serous cyst of the broad ligament, containing, by estimate, about fifty cubic centimeters. The wall of the right tube is one centimeter thick, showing interstitial salpingitis. There are no traces of ovaries with the specimen.

Microscopical examination: Section from wall of pus-sac shows interstitial salpingitis with small cell infiltration of all the coats. Section through one of the growths shows a typical myomatous structure.

Bacteriological examination: Smears from cervix and pyosalpinx show no micro-organisms. Cultures from cervix show diplococcus albus.

Case IV.—*Multinodular uterine fibroid with a tubo-ovarian abscess and broad-ligament cyst of right side. Pankhysterectomy. Recovery.*

H. H., aged 34, married. Referred by Dr. H. A. Bischoff. Family history is tubercular, a number of relatives having died of phthisis. As a child, the patient was always healthy until the age of eight, when she had spinal trouble. Since her recovery, although deformed, her health has been fairly good. Her menstrual functions have been normal. Six months after her marriage, nine years ago, she had a miscarriage, and since that time she has had more or less pain in the lower abdomen, especially on the right side. Micturition is increased, and for the past three months her appetite has been poor. Examination by the vagina showed an immovable cervix, and a mass to the right and behind the uterus.

Diagnosis: Uterine fibroid, probably complicated by pyosalpinx.

Operation.—May 31, 1898. Just prior to the operation the pelvis was measured by Dr. C. E. Paddock, who found it only slightly contracted. A six-inch incision was made in the median line. The omentum and a loop of the small bowel were adherent to the parietal peritonæum. There was a large, thin, broad-ligament cyst on the

right side. A right tubo-ovarian abscess was enucleated with some difficulty on account of the dense adhesions to small intestines and rectum. The ovarian abscess ruptured during the enucleation. The left tube and ovary were enucleated and the broad ligament tied off in the usual manner. After the uterus was removed there was considerable oozing from the raw surfaces and the cut vaginal walls, which was only stopped by gauze pressure. Iodoform gauze was packed in the pelvis and led out through the vaginal opening. The abdomen was thoroughly irrigated, and the abdominal incision closed by tier sutures. There was no shock during or following the operation. The foot of the bed was elevated in the usual manner. The patient is having an uneventful convalescence.

Examination of Specimen.—The specimen consists of the uterus and both tubes and ovaries. The uterus has in its right wall a subserous fibroid, three centimeters in diameter; also, an intramural fibroid one and a half centimeters in diameter. The uterine mucosa is thickened and hæmorrhagic. The right tube is adherent to the uterus and ovary, and its external surface is covered with inflammatory exudates. There is a serous cyst of the broad ligament which would contain fifty centimeters of fluid by estimate. The ovary contains a small abscess cavity, one centimeter in diameter, containing thick yellow pus. The interior of the tube is dilated and filled with yellow pus. The left tube contains no pus, but its mucosa is swollen and hyperæmic. Microscopical examination: (1) Glandular hyperplasia of the uterine mucosa; endometritis with large blood spaces. (2) Left tube. Interstitial salpingitis; infiltration of mucosa, muscular and serous coats. (3) Right tube. Small cell infiltration of all coats. (4) Typical subserous myoma. Few vessels; rod-like nuclei.

Bacteriological examination: Smears and cultures show no pathogenic bacteria.

Case V.—*Multinodular uterine fibroid growing into left broad ligament. Calcareous corpus luteum. Panhysterectomy. Recovery.*

F. W., colored, married, aged 45. Referred by Dr. C. H. Bryan. Family history negative. Menstruation has always been normal until the past two or three years, when the intervals became shortened and the duration of period increased. She has had one child and one miscarriage. About six weeks ago she was taken with severe pain in the lower part of the abdomen, the attack lasting some days. She has been tender and ailing ever since.

Examination by vagina shows cervix carried upward toward

pubes by a hard mass attached to the uterus in the posterior cul-de-sac. By the abdomen other hard masses closely connected with the uterus can be made out, extending nearly to the umbilicus. There is considerable tenderness on both sides of the pelvis. Appendages could not be palpated.

Diagnosis: Multinodular uterine fibroid.

Operation.—June 3, 1898. An incision four inches in length was made in the median line. Left tube and ovary were tied off first. The posterior lobe seemed to arise from left broad ligament. The remainder of the operation was performed as previously described. Anterior and posterior peritonæal flaps were sutured with catgut, The abdominal incision was closed by tier sutures. There was no shock during or subsequent to the operation. The patient is having an uninterrupted convalescence.

Examination of Specimen.—The endometrium is swollen and hyperæmic, showing endometritis. There is a pedunculated polypoid growth, with retention cysts, four centimeters long, and one and a half wide, projecting into the cervical canal. Lower down may be seen a smaller polypoid growth projecting from the external os. On the left side of the uterus is situated an intramural fibroid three and a half, and another three, centimeters in diameter. Projecting into the uterine cavity from the fundus is a submucous fibroid three and a half by one and a half centimeters in diameter. Posterior to the fundus is an intramural fibroid six centimeters in diameter, and in the right broad ligament are situated two fibroids, the larger ten centimeters, the other one and a half centimeters, in diameter. The right tube is thickened, and the ovary contains a mulberry-shaped calculus, apparently caused by a calcareous degeneration of a corpus luteum. The stone measures four millimeters in diameter. The ovary is otherwise normal.

Microscopic examination: (1) Adenomatous hyperplasia of uterine mucosa. (2) Glandular polypus with retention cysts, low epithelium, nuclei in one row. (3) Submucous myoma, typical structure, few vessels, rod-like nuclei. Little connective tissue in wavy bundles.

The frequency with which fibromata are complicated by diseased appendages.—It will be noticed that three out of the five cases were complicated by pyosalpinx, and in two of these the ovary also was the seat of abscess formation. This frequency does not correspond with my previous experience with fibroid growths of the uterus. In fact, out of some twenty cases of fibromata removed by hysterectomy, I remember of only one case being complicated by pyosal-

pinx. In some of these twenty cases the tubes were somewhat diseased, but not enough to warrant microscopical examination. During the short time at my disposal I have endeavored to find some literature upon this question, but have been almost entirely unsuccessful except for vague statements and estimated percentages of cases of uterine fibromata complicated by pyosalpinx.

Fabricius (*Cbl. f. Gyn.*, No. 41, 1895) studied forty-two myomata uteri removed in Chrobak's clinic. In sixteen cases both tubes were perfectly normal. The others exhibited the various forms of inflammation, endosalpingitis, interstitial and follicular salpingitis, hydro-, pyo-, and hematosalpingitis. It is not stated in what proportion of cases pyosalpinx was found, except for the fact that myomatous uteri are well known to be more prone to endometritis, and, therefore, more liable to have resulting tubal infections. The frequency with which pyosalpinx may be associated with these growths will depend largely upon the environment of the patient and the degree to which she is exposed to gonorrhœal and other infection.

The extent to which the mortality resulting from the operative treatment of uterine fibromata may be influenced by an accompanying purulent disease of the appendages.—This will depend largely upon the variety of micro-organism which has produced the purulent collection, its virulence, the extent to which the peritonæum is contaminated during the removal of the pus-sacs, and the resistance of the patient. The abdominal surgeon has learned that the peritonæum can dispose safely of much septic material, and that the mere rupture of a pus-sac within the abdominal cavity is only exceptionally followed by fatal peritonitis. This immunity can be partially explained by a study of the bacteriological findings of the contents of the pus-sacs, which show that in a large proportion of cases the contents are sterile or the micro-organisms non-virulent. In dealing with uterine fibromata we oftentimes have another factor to consider, namely, loss of blood resulting from the removal of a very large or very adherent vascular growth and the subsequent shock. Just as infection is more liable to follow post-partum hæmorrhage, so do the hæmorrhage and shock attendant upon operations for the removal of uterine fibromata lessen the resistance of the patient and render her more liable to infection. It has been my experience that the pus-sac will be ruptured during the enucleation in the vast majority of cases. Hence, every precaution should be taken to avoid contamination of the adjacent and remote peritonæal areas. As soon as the incision is made, the patient being in the

Trendelenburg position, the bowels can be protected by large pads. It may seem unnecessary to emphasize this step in the technique, but I have seen many cases operated upon when not the slightest attempt was made to limit the contamination, and even such distant organs as the liver and stomach must have been bathed in pus. No matter how much an operator may have come to disregard the breaking of a pyosalpinx within the abdomen, he would always prefer removing the sac without rupture or to have a case without the pus-sac; hence, it is only common sense that he use every precaution to make the purulent case as near clean as he can.

It will be noticed that the bacteriological findings in the cases reported as complicated by pyosalpinx show the pus to be sterile in two cases, and a pseudo-diplococcus present in the third case. This will probably explain why graver symptoms did not supervene, as the sacs were all ruptured during enucleation.

The choice of operation.—The same operation was performed in all five of the cases. It is the one I invariably adopt in preference to all others as it seems to me to have certain advantages. The time required for panhysterectomy is no longer than that for supravaginal amputation, yet far better drainage can be secured, and this factor should, in my opinion, outweigh all others, unless experience shows that the removal of the cervix allows of subsequent prolapse of the vaginal walls. I have fortunately been able to keep track of most of my cases of panhysterectomy, and have been on the lookout for this complication, but in no case has it resulted.

An examination of the specimens, I think, will show that myomectomy would not have been applicable to any of the five cases. In fact, I think that myomectomy is a very much overdone operation at the present time. I would limit it to the removal of one or two fibroid nodules. Beyond that number, I would prefer a hysterectomy, unless there were reasons why a portion of the uterus should be retained. In case both appendages had to be sacrificed, I would always do a panhysterectomy in the presence of fibroid growths.

Irrigation of abdominal cavity.—Irrigation, like drainage after abdominal section, has been carried to excess, and again fallen into a disuse which is by no means merited. While experience teaches that there is no need of flushing the peritonæal cavity in clean cases, it does not follow that the peritonæal toilet can be entirely neglected, or that the pelvic cavity should be made a depository for refuse matter more or less septic in character. I do not consider it a valid argument that since flushing is unable to remove every micro-organ-

ism it should be discarded altogether and the peritonæum cleansed with sponges. With the bowels protected by pads the organisms are not liable to be washed into clean fields and large amounts of hot salt solution are able to cleanse the cavity as can be done in no other way. The irritation of the salt solution is far less than that resulting from mopping the peritonæum with gauze, and it is an axiom in abdominal work that every means should be employed to preserve the integrity of the peritonæum.

Drainage.—As remarked before, under another heading, I consider drainage in certain cases of hysterectomy for fibroids a prime necessity. While the peritonæum under favorable circumstances can take care of a great deal of septic material, it does not follow if much violence has been done this membrane in the shape of denudation of large tracks in our efforts to enucleate a pelvic growth, or if there be left at the bottom of the pelvis a pond of fluid which by nature is the best of culture materials. I avoid drainage through the abdominal incision, whether by tube or gauze, from the danger of infection which may arise from this source. Hence, I employ two methods of drainage, one to be used for the mild cases, and both for the severe cases. For the milder cases, where the peritonæum has been but little injured, and I am sure that there will be no oozing from the pelvis, I close the latter by suturing the anterior and posterior peritonæal flaps with catgut and place a small gauze drain, so that it just protrudes through the cut vaginal walls. The gauze is withdrawn about the third or fourth day. In the other class of cases, the serious cases, where the peritonæum has been unavoidably injured, or the pelvic cavity has been deluged with pus, the bacteriological character of which I am ignorant, I do not close the pelvic cavity by a peritonæal suture. I pack gauze loosely over the denuded surfaces and lead the end out through the amputated vagina. In addition, if there be a high pulse, hæmorrhage, and shock, I adopt the suggestion of Clark of Johns Hopkins and leave from a pint to a quart of salt solution within the abdominal cavity, and elevate the foot of the bed about eighteen inches for the first thirty hours after the operation. I adopt this procedure because my cases are doing better with it than they did before, and I cannot but believe that it is a valuable adjunct to measures hitherto employed for the prevention and treatment of sepsis and shock after abdominal section. Moreover, I make free use of the subcutaneous injection of salt solution both during and subsequent to the operation for hæmorrhage and shock. I find nothing so good for the intense thirst

following a section as a rectal injection of a pint of salt solution every hour as long as the bowel will retain it. I sometimes substitute this for the subcutaneous method.

Ligature and suture material.—Since abandonment of silk and the substitution of catgut for ligatures and sutures within the abdomen I have had much smoother convalescence following panhysterectomy. The silk ligatures became infected and were troublesome in many ways. Since I have used catgut I have had but an occasional case of femoral phlebitis following hysterectomy. This is not a fatal complication, but it is exceedingly annoying and prolongs the convalescence.

Fibroids complicated with pregnancy.—The diagnosis was not made prior to or during operation. The irregularities of menstruation were ascribed to the fibroid condition, when in reality they were due to the pregnant state. The patient was probably well relieved of her difficulty, as the danger arising from a pregnancy in a fibroid uterus may be considerable. Bland Sutton says (*Clinical Journal*, February 23, 1898), in speaking of this condition: "When a woman with a myomatous uterus conceives it is certain that her life is in jeopardy, not only so long as the foetus remains within it, but also when it is expelled, whether this occurs prematurely or at full term."

Calcareous corpus luteum.—This is a comparatively rare condition. It was formerly supposed that these solid tumors of the ovary were osseous in character, but since the work of Williams (*Amer. Jour. of Obstet.*, July, 1893) it is pretty definitely settled that they are due to calcification of ovarian structures. They are probably more common than one would be led to expect from the reported cases.

Dr. Ries recently discussed this subject before the Chicago Pathological Society and reported a case of his own and one of Dr. Hektoen's. Dr. Herzog has since reported a case. Recently Ries described another calcified body in an ovary removed by vaginal cœliotomy.

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SEQUELÆ OF ABDOMINAL OPERATIONS.*

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It is of melancholy interest to note the large number of women who, having submitted to abdominal operations, been reported as cured and dismissed from the care of the operator, afterward drift from physician to physician, dispensary to dispensary, seeking for relief from complications and sequelæ, or consequences of these operations. Oftentimes these sequelæ are the direct result of wilful disobedience of the surgeon's injunctions, the too early resumption of active duties, or of the marital relation after cœliotomy, the neglect of patients to return for treatment after dismissal from hospital, etc. The wash-board and the bicycle are fruitful causes of these complications. Frequently such patients refuse to return to the original operator, and unjustly accuse him of results of which he has no knowledge, and for which he is in no way to blame.

Those patients who come into one's office with despondent countenances and doleful tales, accusing the surgeon of entailing prolonged misery and untold suffering, quickly forgetting the pus-tube that poisoned the blood or the fibroid that drained the system, in the consciousness of their present discomfort, are the ones that require the physician to exercise all his ingenuity and powers of "informal hypnosis" to keep them from falling into the unscrupulous hands of the electrical specialist, Christian (?) scientists, or smooth-tongued gentry, that cure all diseases, and remove all neoplasms without resorting to the scalpel.

For the past five years the writer has made copious notes of cases met in private and dispensary practice, which have had to undergo secondary operations, or were suffering from the remote results of cœliotomy; and has received reports from friends who have re-operated on some of his own cases. Such a study makes us realize that even in these days of refined diagnosis, improved technique, and most dexterous surgery, abdominal operations are not to be too readily performed. "Necessity is the only justification for cœliotomy." The scarcity of literature on remote results, is due to the fact that it is

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very hard and unpleasant to tell our confrères of our mistakes and ineffectual efforts to relieve some of our patients.

The sequelæ briefly considered in this paper are as follows: (1) Stitch abscesses and sinuses. (2) Ventral hernia. (3) Adhesions. (4) Bladder, rectal and vaginal prolapse. (5) Pelvic abscesses, etc. (6) Fecal fistulæ. (7) Enlargement and tenderness of the scar. (8) Untoward symptoms after ventrofixation. (9) Pain without demonstrable lesion. (10) Psychic and nervous phenomena.

I.—Stitch abscesses indicate a faulty technique; either infection of the suture pathway or the material, or too tight tying of the suture; and they occur most frequently in those cases where pus is present in the pelvis, or in emergency operations where the thorough preparation of the patient has been impossible. Buried silkworm gut or silver-wire sutures must often be removed because of the infection, irritation or discomfort produced by their presence. Speedy evacuation of the pus prevents extensive mural abscess and general or peritonæal infection.

Sinuses may be divided into parietal and peritonæal, that is those which exist simply in the abdominal wall, and those which communicate deeper in the pelvis with the stump or ligature. If due to an infected suture, these will persist for months and years until the ligature is removed, when they often heal spontaneously. In other cases we find chronic persistent sinuses without any apparent cause or foreign substance in the abdominal cavity. An infected drainage tract frequently results in a sinus of the abdominal wall. In one case under observation the sinus extends through the abdominal wall, along the posterior surface of the uterus, deep into the pelvis. In another, three ligatures have been spontaneously evacuated from an abdominal sinus which still annoys the patient. In several others observed a drainage tract has persisted, discharging a small quantity of pus and blood daily for six to twelve months after the operation, cases trying alike to patient and physician. Foreign bodies, such as sponges, gauze-pads, and drainage-tubes left in the abdominal cavity may produce sinuses, and thus render less beneficial skilful operations.

When the sinus is due to infected sutures, the question of removal is sometimes a difficult one. If it be superficial, a secondary operation is much less dreaded than when the deeper ligatures of an ovariectomy or a hysterectomy are involved. Sometimes the offending material may be caught by a tenaculum, or by the ordinary Gross ear-hook and extracted. In other cases, prolonged attempts at re-

moval by such means prove ineffectual, and a vaginal or abdominal section must be performed. In persistent drainage tracts the cauterization of the exuberant granulation with nitrate of silver and cleansing the sinus with carbolyzed glycerine offer the best results.

II.—Ventral hernia predominates in women with very thick abdominal walls, infected wounds, or when the patient has resumed her active duties too soon after an operation. The use of close figure-of-eight sutures diminishes the number of cases of ventral hernia. It has been observed that the hernia occurs sometimes several years after the operation, and may cause no trouble until the patient is alarmed by some physician or friend. Occasionally enteroptosis with attendant symptoms may arise. In one case of the writer's a ventral hernia followed an operation for appendicitis in a little girl twelve years old. In another operation for diseased appendages in a corpulent woman, in which gauze drainage was used, a sinus and ventral hernia followed. Some months later the case was subjected to a second operation; the hernia was relieved, the sinus tract thoroughly curetted, and the ligatures removed; but the sinus persists. If a ventral hernia causes very great annoyance palliative measures, such as the application of a truss or a snugly fitting binder, may be employed; but an operation removing the redundant and cicatricial tissue, exposing muscle and fascia on both sides, and introducing figure-of-eight silkworm-gut sutures, will be more certain to bring the sufferer the coveted relief.

III.—Adhesions following operations for serious inflammatory conditions in the pelvic are very frequently found, and often necessitate secondary operations. Adhesions between either the small or the large intestine and the stump after ovariectomy, salpingectomy, or hysterectomy; between the appendix vermiform and the right appendix, between the bladder and the fundus of the uterus or anterior abdominal wall; or omental and intestinal adhesions to the peritonæal surface of the abdominal wound; all these may produce symptoms varying in severity from trifling discomfort to positive pain. They may be the cause of persistent pain in the lower abdomen, of nausea and vomiting, of tormina, particularly during defecation; of constipation, and of enteroptosis with associated syndroma. These symptoms may be aggravated possibly during urination, defecation or locomotion, and sometimes render the patient's life so miserable that the abdomen must be re-opened and the adhesions relieved; every precaution must be taken to prevent their recurrence by suturing the peritonæum over the stump, by a careful repair of any slight peri-

tonæal injuries, by the covering of raw and exposed surfaces, by the use of the thermo-cautery, and finally, before closing the abdomen, by filling the peritonæal cavity with normal saline solution.

IV.—Bladder and rectal prolapse are most frequently found after hysterectomy, the entire removal of the uterus so changing the normal pelvic relations that the effort of straining during lifting or defecation forces the rectum and bladder downward, producing much backache and discomfort. In a case recently under observation, the writer packed the vagina quite tightly with sterilized lamb's wool, temporarily relieving the discomfort and rectal tenesmus. This sequel may be averted by a careful shortening of the broad ligament in such a way as to give support to the upper extremity of the vagina, by performing supra-vaginal rather than complete hysterectomy for non-malignant growths, or by plastic operations on the anterior and posterior vaginal walls, which in a measure restores the normal support. The present tendency to conservative work is evinced by the resection of tubes and ovaries, by myomectomy instead of hysterectomy, and in case of pelvic abscess, by the use of the vaginal section as preliminary to, or as a substitute for, an abdominal one; all these evidence the advance toward a better gynæcological surgery.

V.—Pelvic abscesses following cœliotomy have been noted in a few cases, usually due to an infected ligature or an incomplete removal of the abscess wall. They should be treated by vaginal section and drainage. Another sequel is inflammation or malignant change occurring in the stump after supra-vaginal hysterectomy. Sometimes the only symptom is an annoying purulent or bloody discharge. Uterine inflammation may occur when the appendages have been removed for pyosalpinx or salpingo-ovaritis. In one case in the series, a Battey's operation by a skilful operator had been performed to prevent the growth of a small fibroid. The fibroid uterus afterward underwent softening and degenerative changes necessitating hysterectomy. The adherent retro-displacement of the uterus has been found in several cases after the appendages had been removed, and suggests the advisability of temporary ventrofixation whenever the uterus tends to a backward displacement.

VI.—Fæcal fistulæ are the *bete noir* of abdominal surgery, and often the most difficult sequelæ to deal with. The failure to recognize intestinal injuries in bad adhesive inflammatory cases, the imperfect closure of such injuries when detected, the failure of union to occur, as in tubercular or carcinomatous conditions, and infected sutures ulcerating into the bowel are the most frequent causes.

The prognosis depends upon the general vitality of the patient and the position of the intestinal opening. Many fistulæ heal slowly and require nothing but cleanliness, provided the intestinal canal below is unobstructed and no spur-like obstacle to the fæcal current is present in the canal. Persistence may be due to the contact of the mucopidermal lining preventing union, or to angulation at the site of the fistula, as, for instance, when the opening in the large bowel is where it passes over the pelvic brim and the adhesions keep the intestine more or less sharply flexed. Fæcal fistulæ may be divided into three classes: (1) Those that communicate with the anterior abdominal wall. (2) Recto-vaginal. (3) Entero-vaginal. In one case in evacuating a pelvic abscess per vaginam, the writer thrust a finger through the anterior wall of the rectum. The abscess cavity was packed with gauze for twenty-four hours; after its removal frequent irrigation of the cul-de-sac was practised, and spontaneous healing occurred in a few days.

In a case at present under observation a fæcal fistula followed an operation for a densely adherent pyosalpinx with sigmoidal adhesions. The weak points in the sigmoid were recognized and sutured, but in spite of this precaution a fæcal fistula followed, and the greater portion of the fæcal evacuation now occurs through the anterior abdominal wall. As soon as the general condition of the patient permits, if no diminution in the fistulous opening is observed, a secondary operation will be performed.

In the surgical treatment of these conditions, immediate complete plastic closure of the bowel defect and of the cutaneous opening at the same time may be attempted, closing the opening in the bowel with Lembert sutures, applied with great care to prevent possible fæcal extravasation. If the opening is large so that closing by this method would interfere with the fæcal current, then anastomosis, either by adossement, by circular enterorrhaphy, or by the Murphy button may be employed.

The cardinal principle in intestinal suturing is that no tension should be exerted upon a suture. Neglect of this principle will invariably cause disaster. I believe drainage should be used in all cases of intestinal injury or anastomosis.

VII.—Enlargement and tenderness of the scar in the abdominal wall is sometimes found, and protection of the line of incision from any pressure of the clothing with gentle massage is the best treatment.

VIII.—After the operation of ventrofixation a few cases have

complained for many months of a dragging sensation at the fixation-point. Two cases, in which pregnancy occurred after the operation, suffered much during the early part of pregnancy from symptoms evidently due to the enlarging uterus dragging on the adhesive band. The amount of discomfort will vary with the extent of fixation. Interference with the function of the bladder was noted in another case where suspensio uteri had been done. This difficulty may be obviated in case of retro-displacement by the intra-abdominal shortening of the round ligaments, thus permitting the breaking up of adhesions and some slight mobility of the organ without allowing a recurrence of the retro-displacement. If ventrofixation is selected as the best available operation, an effort should be made to produce the smallest band of fixation that will sustain the uterus in normal anteversion. By using fine suture material, and passing it through only the peritonæal lining of the abdominal parietes, this result will be secured.

IX.—Very frequently the pain will be severe in a case in which a careful physical examination reveals no demonstrable lesion. Intractable pelvic neuralgia, pain in the back and lower abdomen, tenderness of the vagina, rectum, and coccyx may be due to a neuritis, or be simply the local expressions of a profoundly neurasthenic condition. Anesthesia or hyperesthesia of abdomen, vulva, and vagina may be classed under this head. The treatment is unsatisfactory, and the prescriber frequently in a state of "therapeutic despair." **Massage**, hot douches, tonics, with careful attention to the excretory organs, are the best remedial agencies. Change of environment, with pleasant and cheerful surroundings, will often alleviate the sufferings of such patients.

X.—The psychic and nervous phenomena produced by the premature menopause, although not the most dangerous, are often the most distressing conditions. The vasomotor changes, the waves of heat and flushes coming at variable intervals, the cardiac neuroses and excessive perspirations, with the fits of weeping and indescribable depression, are too well known to require further description. The patient is constantly conscious that mutilation has occurred, and that the reproductive function has been destroyed, and the physician fully realizes how difficult it is to

Minister to a mind diseas'd,
Pluck from the memory a rooted sorrow,
Raze out the written troubles of the brain.

Many of these cases have hysteroneurosis and depression tending

almost to melancholia for from three to five years after a sacrificial operation. Insanity, the most appalling of all the sequelæ, has been noted by Kelly in eight cases out of two-thousand operations.

Treatment.

I.—Prophylactic, consisting of conservative ovarian surgery, leaving a portion of the ovarian tissue in case of ovariectomy or hysterectomy in women not near the natural menopause.

II.—Dietetic—forced nutritious feeding on easily assimilable diet, with most careful avoidance of constipation and auto-intoxication.

III.—Mental therapeutics—informal hypnosis—kindly encouragement of the patient, aiding her to maintain rigid self-control until the crisis of the artificial climacteric is passed.

IV.—Tonics—strychnine, atropine, and the bitter vegetable tonics, with correction of digestive errors, will assist materially.

V.—Local treatment for the relief of pelvic congestion—boroglyceride tampons and prolonged hot vaginal douches. Pelvic massage has limited use in these conditions.

VI.—Rest cure, properly carried out with a trained nurse and rigid discipline, will accomplish much in some cases.

The hour has passed when gynæcologists

Count that day lost whose low, descending sun
Views no ovaries removed, nor hysterectomy done.

And a new era of gynæcological conservatism has arisen when the salvation rather than the sacrifice of the organs of reproduction is the chief consideration. We more and more fully realize the truth of Goodell's gynæcological creed, "that the physician who recognizes the complexity of woman's nervous organization, and appreciates its tyranny will touch her well-being at more points, and with a keener perception of its wants, than the one who holds the opinion that woman is a woman because she has a womb."

INFECTIVE PERITONITIS, WITH SPECIAL REFERENCE
TO A SUGGESTED METHOD OF IMPROVING
THE PRESENT METHODS OF SUR-
GICAL TREATMENT.

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(Continued.)

Method of Treatment employed in the Case of Infective Inflammatory Conditions within the Peritoneum.

Here I shall in no way refer to medical measures which may be adopted, but shall confine myself to various surgical procedures which are employed and carried out.

In cases of general peritonitis, as I have already stated in the beginning of this paper, the adoption of every method recommended by surgeons of repute has been followed by unsatisfactory results, and in spite of the advocacy of each, favored probably by some happy experience of exceptionally successful operative procedures, it must be confessed that infective peritonitis is attended in the hands of the most skilful operators with a very high mortality.

I have already pointed out the great variations which follow the development of micro-organisms in the peritoneal cavity, both as regards the effects on the system, and the reactionary changes induced in the tissues exposed to the infection. I have also enumerated many observations and experiments showing the great part played by microbes contained within the bowel-lumen.

The accumulated facts which I have summarized, have led me to the clear realization of the difference which exists between an infective process started within the peritoneal cavity, and one started in most other parts of the body, *e.g.*, arm, buttock, etc. The great difference is this, *viz.*: that the peritoneal cavity is in intimate relationship with an enormous storehouse of micro-organisms, *viz.*, the alimentary tract from which the germs may pass with great readiness where any condition exists which diminishes the vitality of the bowel-wall.

Irrigation of the peritoneum with saline solution or boiled water has its advocates, but there can be no doubt that this method is not sufficient to clean the peritoneum thoroughly, even where adhesions do not exist.

Reichel experimented with dogs and found that he could never save a dog by this method, if severe infective peritonitis was in progress. He also found, on putting fecal matter within the dog's peritoneum, that, after sponging and irrigating with as much as ten or fifteen liters of water, he could not clean the peritoneum from particles. Sponging alone is recommended by many, but it is no more advantageous than irrigation. The most satisfactory results are obtained where free drainage of the infected cavity has been carried out beforehand. Still this method, even though preceded by sponging or irrigation, has done but little to lessen the death-rate in infective processes within the peritoneal cavity.

In mentioning these methods I refer to them as being entirely disassociated from the use of antiseptics.

My aim in writing this paper is to urge the employment of a suitable antiseptic agent, associated with free irrigation and free drainage (and sponging in certain cases).

At the present time the employment of antiseptic solutions within the peritoneal cavity is very little in vogue. Formerly, various solutions were employed by different operators, *e.g.*, weak boracic acid, salicylic or corrosive-sublimate solutions, but these have been gradually abolished.

The reason for this change was the establishment of the importance of preserving the integrity and vitality of the peritoneal endothelium. It then became evident that to use antiseptic solutions so weak as not to injure the peritoneum and yet not strong enough to destroy or inhibit the activity of microbes within the peritoneal cavity, was a useless procedure. Another important consideration also had to be borne in mind, *viz.*, the toxic influence on the system of the absorbed antiseptic.

It is evident, then, that an antiseptic which can be safely and effectively used within the peritoneal cavity must be one capable of being employed in solutions of such strengths as shall inhibit the activity of the microbes, or destroy them, and be non-injurious to the peritoneum. It must also be non-toxic to the system when used in effective quantities.

About two years ago my attention was directed to the new preparation known as formalin, and ever since I have used it

largely in surgical work in cases where infective processes were at work.

Very soon after I began to use this antiseptic I became convinced of its great power in checking the activity and growth of pathogenic organisms.

Bacteriological experiments, also, carried out under my supervision regarding the influence of various strengths of solutions of formalin on different cultures, served but to corroborate published results made by various experimentors of repute.

About a year and a half ago I determined to test the effects of formalin in infective processes within the peritoneal cavity in the hope of being able to establish the value of its action, and to determine whether or not it would fulfil the requirements which I have mentioned above as pertaining to an ideal intra-abdominal antiseptic.

Before beginning to use it in the human subject I decided to test its influence in the peritoneal cavity of animals.

For this purpose I chose various breeds of dogs as being most serviceable, and as possessing a peritoneal coat less sensitive than that of the rabbit or guinea-pig—the other animals which it is most convenient to employ in the laboratory.

In certain cases I used the rabbit, and these will be noted later on. My main object was, in the first place, to determine the influence of various strengths of formalin solution on the peritoneum and on the system in general, and to find out the strongest solution that could be borne with safety.

One fact emphasized by all experimentors is the powerful influence of this substance in inhibiting the activity of microbes. (It is believed by some that this inhibition is due to the transformation of the outer covering of the microbe into a hard, chitin-like material.)

Of course, though such inhibition be not so effectual as the germicidal action of the drug, for all practical purposes the former influence is all that need be exerted in the treatment of the class of cases under consideration.

Indeed, in the case of formalin, to get an active and rapid germicidal influence, one would require to use strengths which would be decidedly harmful (I refer to solutions of 1 in 100 or thereabouts).

NOTE.—It is very important in making up solutions of formalin to bear in mind the following points:

The earliest commercial preparation supplied was described as a forty-per-cent. solution of pure formaldehyde in water.

It has, however, been shown that many bottles are not of this strength, but are as low as thirty or twenty per cent., or even less. In the next place care must be taken, in making up a solution of a given strength—say 1 in 1000—to specify whether this is a strength relating to the solution in the bottle, or to the formaldehyde which is present in the solution. In my clinical and experimental work I have made up solutions in relation to the formaldehyde in solution. Thus, my solution of 1 in 3000 is obtained by adding 8 minims of the forty per cent. formalin to 20 ounces of water.

I shall now detail the various experiments carried out by me in the physiological laboratory of McGill University.

I.—Effects of formalin on the normal peritoneum.

1. Pug dog. Peritoneal cavity opened into by a mesial incision, and thoroughly irrigated with 20 ounces of formalin solution (1 in 2000), several ounces being left in the belly when the abdominal incision was closed. Within an hour the dog was running about, having shown no signs of distress. He recovered perfectly, being apparently as lively after the operation as he was before.

2. Terrier bitch. The peritoneal cavity was opened, thoroughly irrigated with 40 ounces of formalin solution (1 in 1000) and then closed, several ounces being left behind. In a little over an hour the animal had fairly well recovered from the effects of the ether and had begun to run about. After a few hours she was apparently as well as before the operation, and continued perfectly normal, day after day, having exhibited no sign nor symptom of distress.

3. Terrier pup. Aged five months. In this case the same procedure was carried out as detailed in experiment No. 2. Within an hour the animal was running about and continued perfectly normal.

4. Rabbit. A similar procedure to the last was adopted, recovery following without any abnormal sign or symptom.

5. Terrier pup. Aged four months. Peritoneal cavity opened and irrigated with 30 ounces of formalin solution (1 in 500), normal saline being used to prepare the solution instead of water as in the first four experiments described. A few ounces were left behind and the abdominal incision closed.

Within an hour the pup was running about, continuing afterward as healthy and frisky as before the operation.

6. Terrier bitch. Procedure the same as in case of experiment No. 5, with the same successful results.

7. Terrier. The same experiment as in No. 5 was carried out, except that the formalin solution was made up with distilled water. A couple of hours after the operation the dog was quite lively, and for two days was apparently quite healthy. On the third day the animal became very weak, and kept very quiet; vomiting began and continued from time to time until next day, when death occurred.

Autopsy: Septic peritonitis was found, the intestines being intensely congested, and covered in places with thick lymph. Very little fluid was present.

Cultures were made and abundant growths of staphylococcus aureus were obtained; the bacterium coli commune was not present.

The infection of the peritoneum in this case was undoubtedly due to the fact that the dog gnawed away the dressings and some of the stitches on the second day after the operation, so that the incision became opened up, forming a free communication between the air and the peritoneal cavity.

8. Pug dog. The procedure carried out was the same as that described in experiment No. 7.

During the operation a considerable portion of omentum bound to the abdominal wall by adhesions was made free, resulting in the escape of some blood. The dog remained quiet during several hours following the operation, and continued languid during the next day. On the second day death occurred.

Autopsy: The dressings and stitches were found to have been gnawed away and the abdominal incision somewhat opened up. A couple of ounces of bloody fluid were found in the peritoneal cavity, but no signs of peritonitis were present. The fluid contained no formalin. Only a few staphylococci were found in it. The bloody fluid in this case had apparently come from the area of the separated omentum. The cause of death was not very evident.

The dog was in a weak condition at the time of operation, and probably had poor resisting power.

NOTE.—The above experiments clearly demonstrate that no ill effects follow free irrigation of the peritoneal cavity of the dog with lotions of formalin in strengths of 1 in 2000 and 1 in 1000.

Moreover, the absorption of a considerable quantity left in the belly is not followed by untoward results.

As regards the stronger solution—1 in 500—it is evident that in some cases it can be quite safely used.

The deaths which I have described in the case of two dogs in

which this strong solution was used were probably due to accidental causes.

II.—Introduction of infective material into the peritoneal cavity followed by immediate irrigation with formalin solution.

1. Terrier pup, about six-months old. The peritoneal cavity was opened and a broth-culture of staphylococcus aureus introduced (from a case of septic peritonitis). Shortly afterward the cavity was irrigated with 16 ounces of formalin solution (1 in 1000), a small quantity being left behind before closure of the abdomen. The dog recovered quickly from the effects of the ether and continued apparently quite healthy.

2. Terrier. A broth-culture of streptococcus was introduced into the peritoneal cavity, the bowel and omentum being pinched and scraped in several places. Soon after, the cavity was irrigated with 16 ounces of formalin solution (1 in 1000), several ounces being left in the belly. Recovery occurred without symptoms.

3. Collie. The same procedure was carried on as in the last case, save that a fluid culture of bacterium coli commune was introduced.

Within an hour of the operation a violent fit of vomiting caused one of the stitches to be torn out. This was followed by the escape of part of the omentum through the abdominal incision; at the same time the dog tore off the dressings.

When the animal was found in this state the omentum was lying on the floor, cold and dirty; it was replaced uncleaned in the peritoneal cavity, and some fresh formalin lotion poured in before the abdominal incision was closed.

The animal recovered from the operation without a symptom, and appeared to be perfectly normal.

NOTE.—In the above experiments no attempt at cleanliness was observed during the operation as I was desirous of freely introducing infective matter.

I am quite aware that the successful results in the above cases might by many be considered to be independent of the use of the antiseptic solution employed, and it might be suggested that check experiments should have been carried out. In such cases, however, check experiments may not be at all conclusive, owing to the difficulty of getting two dogs so alike as to make it possible to establish similarity of conditions. Moreover, it is well established that the introduction of infective material into the peritoneal cavity of the dog usually leads to serious or fatal peritonitis.

It might also be alleged that irrigation with sterilized water

might have proved as effectual as the formalin solution. This is undoubtedly possible. The point which I desire to establish, however, is that the solution of formalin, being a safe antiseptic, is calculated to be more effectual than water.

In carrying out the above experiments I had in mind those cases in which, in the human subject, when operating within the peritoneal cavity, infective material escapes. If, in addition to the ordinary means, *viz.*: sponging, irrigation, and drainage, flushing with a solution of formalin of suitable strength can be carried out, an additional chance of safety is given to the patient. Moreover, it must be a source of satisfaction to the operator if several ounces of this solution may be left in the peritoneal cavity without danger. (It will afterward be seen that I have carried out this procedure in the human subject.)

III.—Infection of the peritoneum, followed by irrigation with formalin solution after the lapse of various intervals.

1. Mongrel Dachsund. Peritoneal cavity opened. Bowel and omentum pinched and scraped in several places. A little blood allowed to enter the cavity.

Broth-culture of streptococcus introduced into the cavity; abdomen closed. The animal was languid after the operation, and on the following day, forty-eight hours after the operation, the incision was reopened.

Marked congestion of the bowel and omentum was found, the latter being somewhat crumpled and adherent to the parieties. Some turbid serum was present.

The omentum was spread out, its adhesions being separated. The peritoneal cavity was then irrigated with formalin solution (1 in 1000), a large quantity being left in the belly before closure of the incision.

After the second operation the dog remained quiet for two or three days, showing no marked symptoms of any kind beyond languor. In a short time it was running about apparently quite well.

2. Bedlington mongrel. Peritoneum opened, bowel and omentum pinched in several places, some blood allowed to enter the cavity. A broth-culture of streptococcus was introduced. The animal was rather languid after the operation, and on the following day vomited somewhat.

In forty-eight hours after the operation the abdominal wound was reopened. Peritonitis had begun and was especially well-

marked in the region of the omentum, which was bound to the parietes and to the small intestine by fresh adhesions.

The latter were separated and the belly was washed out with formalin solution (1 in 1000), a large quantity being left inside, and the abdomen was closed. Four days afterward the dog died.

Autopsy: Some of the abdominal stitches had been torn out, so that a communication was established between the air and the peritonæal cavity. (The dog had gnawed the dressings away.)

Peritonitis was present, though not to a marked extent. Half an ounce of turbid serum was found among the omental adhesions.

Cultures made from the fluid showed the presence of staphylococci. The bacterium coli commune was not present.

NOTE.—The dog in this case was not in good condition before the operation, having recently suffered from distemper.

The tearing apart of the wound by the dog introduced an unfortunate complication, which interfered with the progress of the experiment.

3. Pug dog. Abdomen opened. Omentum and bowel pinched in several places. A broth-culture containing staphylococcus aureus and albus was introduced.

After twenty-four hours, during which time the dog was very languid, the wound was reopened.

Marked congestion of the parietal peritoneum, intestines, and omentum was found in the lower part of the abdomen; recent adhesions were present, and a little flaky serum was found.

The adhesions were separated and the peritoneal cavity thoroughly irrigated with a formalin solution (1 in 1000), the belly being left as full as possible when the abdominal incision was closed.

For a few days the dog was languid, but did not vomit nor show any special symptoms. Very soon he was running about apparently quite well.

4. Spaniel. Peritoneal cavity opened. Bowel and omentum pinched and scraped in several places. Blood allowed to enter. Fluid cultures of staphylococcus albus and streptococcus were introduced. In twenty-four hours the belly was reopened. Peritonitis was in progress.

Recent adhesions were broken up, the cavity being thoroughly irrigated with formalin solution (1 in 2000), a large quantity being left in the belly before it was closed.

The dog was languid for a short time, but soon got well, no signs of illness being noted.

5. Terrier. Abdomen opened. Omentum and bowel pinched and scraped in several places, some blood being allowed to enter.

Fluid cultures of streptococcus and staphylococcus aureus were introduced. After forty-eight hours the belly was reopened. Marked peritonitis existed, recent adhesions being numerous.

A considerable quantity of flaky serum was present. The adhesions were separated and irrigation was carried out with formalin solution (1 in 2000), the belly being left as full as possible when the incision was closed.

Besides languor, which lasted for a few days, no special symptoms were noted, and the dog soon moved about in a perfectly healthy manner.

In operating in the above cases for the purpose of introducing the infective material, no attempt was made at cleanliness in my technique, in order that the chance of infection might be greater.

The results obtained are undoubtedly of great interest. It is, of course, possible that in no instance was the infection severe enough to cause a fatal peritonitis, so that it might be urged that the opening of the abdomen, after infection had been in progress, followed by the introduction of formalin solution, had not been the chief factor in preventing death.

On the other hand, such injuries as I inflicted on the omentum and bowel, when accompanied with the introduction of active cultures of pathogenic organisms, are usually attended with fatal results.

It is also remarkable that, in these experiments, the dogs recovered after the introduction of the formalin with such little disturbance. At any rate, the presence of the fluid in the peritoneal cavity must have exerted an important inhibitory influence on the infecting organisms.

These experiments are, it seems to me, strongly suggestive of the line of treatment to be adopted in the human subject in cases in which infective peritonitis is in progress.

A similar procedure to that which was carried out in the experiments would not, of course, be followed in the case of man; in the latter one would, in addition to the irrigation, establish two or more openings through which drainage might be kept up and successive irrigations carried out.

To treat a dog in this fashion is practically impossible, on account of the movements which the animal makes, and because of the difficulty of keeping the dressings in order.

It was because of this practical difficulty that I adopted the plan of irrigating after breaking up soft adhesions, and filling the abdomen as full as possible with the formalin solution.

My aim was to bring about the action of the solution on the infective agents before absorption took place from the peritoneal cavity. It was very evident from my experiments that no general toxic effect resulted from the addition of the formalin solution.

Cases in which I have used Formalin Solution in the Peritoneal Cavity of the Human Subject.

Having gone thus far with my experiments, I determined to try the effects of formalin in the peritoneal cavity of the human subject, and, as will be seen, I proceeded with great caution. My observations have been made in the following cases:

Case I.—Abdominal section for bilateral pyosalpinx. After separation of many adhesions and removal of the diseased parts, the pelvis was thoroughly swabbed out with formalin solution (1 in 1000), and drainage kept up for twelve hours. The patient made a good recovery.

Case II.—Abdominal section for bilateral ovarian abscess and pyosalpinx. After removal of the diseased parts, many adhesions being separated, 60 ounces of formalin solution (1 in 2000) were used for irrigating the pelvis, coming freely into contact with the intestines. The fluid was sponged out and drainage was carried out by means of a glass tube.

The tube was kept in position for twenty four hours, being exhausted several times during that period. At each exhaustion some formalin solution (1 in 2000) was poured into the tube while it was moved up and down and turned around. In this way the track of the tube was made to come into contact with the antiseptic solution. The patient made a good recovery.

Case III.—Abdominal section for pyosalpinx. The same procedure was carried out as in the last case, except that the formalin solution was left longer in the abdomen before being sponged out. The patient recovered well.

Case IV.—Abdominal pan-hysterectomy for sarcoma of the uterus. After removal of the uterus the peritoneal cavity was thoroughly washed out with formalin solution (1 in 2500). The fluid was allowed to drain out slowly through the vagina, and the cavity then flushed out with normal saline solution.

During the after-treatment, the iodoform gauze which was placed in the vagina was changed from time to time, and during the first three days, at each change of dressing, I passed a double catheter into the pelvic cavity and irrigated it with formalin solution (1 in 2000). The patient made a good recovery.

Case V.—Abdominal section for double salpingo-ovaritis. Irrigation of the abdominal cavity was carried out with formalin solution (1 in 2500); some of the lotion was left inside when the abdomen was completely closed. The patient made a good recovery.

Case VI.—Right parametric abscess pointing above Poupart's ligament. The abscess was opened above Poupart's ligament and the cavity washed out with formalin solution, (1 in 500).

During the irrigation the posterior wall of the abscess cavity burst, on account of its extreme thinness.

This was followed by the immediate descent of small intestine into the abscess cavity. This complication was not, however, found out until the irrigation had been continued for several minutes. The irrigation was then stopped and a glass drainage-tube inserted.

At each exhaustion of the tube during the first few days following operation, a little formalin solution (1 in 1000) was introduced so as to come into contact with the drainage tract. My anxiety in this case was increased by the presence under the skin of a pocket into which the pus had burrowed; this was, of course, very carefully dressed and no infection of the peritoneum took place. No ill effects resulted from the application of the strong formalin solution, and gradual closure of the incision took place, the patient making a good recovery.

In reference to these last cases (with the exception of Case VI.) I wish it to be clearly understood that I employed the formalin solutions, not at all because of the value of their antiseptic action, but solely for the purpose of determining their influence when introduced into the human peritoneal cavity in such strengths as to carry out the conditions which I have already detailed as pertaining to the ideal intra-abdominal antiseptic.

I began tentatively at first, merely sponging the peritoneum of the pelvis and its viscera. In Case V. I carried out the same procedure which has been described by me in connection with many of my experiments on dogs, *viz.*, irrigation of the peritoneal cavity followed by closure of the abdomen, a considerable quantity of the solution being left inside.

In no instance did the application of the formalin appear in the

slightest degree to cause any unusual symptoms. The accident which I have described in connection with Case VI., *viz.*, the escape of the intestines into the abscess cavity in the progress of its irrigation with strong formalin solution (1 in 500), was of extreme interest in demonstrating that the human peritoneum may, sometimes at least, stand the irrigation of such a strong formalin solution as well as the peritoneum of the dog.

The application, so entirely accidental in this instance, I would not counsel in any other case, because as I have already pointed out, the inhibitory influence of weaker solutions (1 in 1000, 1 in 2000, 1 in 3000, etc.) on microbial activity is sufficiently strong; and the great desideratum in dealing with the peritoneal cavity is to obtain the greatest amount of benefit with the smallest amount of risk to the peritoneal endothelium.

In a certain number of my experiments on dogs, as well as in my operative procedures on the human subject, I employed normal saline solution instead of water in making up my formalin solutions. This I did in the expectation that they would be better borne by the peritoneum. In future work I intend to modify this procedure still farther, *viz.*, first of all, irrigating the peritoneum thoroughly with saline solution, removing this by sponging, and afterward introducing the formalin solution.

The object of this variation is to prevent too rapid absorption of the formalin solution by the peritoneum, and thus to allow its activity to be longer manifested in relation to the infective material present.

That this previous irrigation with saline solution reduces the absorptive powers of the peritoneum, seems to have been fairly well established by Kinscherf's and Delpet's experiments:

KINSCHERF'S EXPERIMENTS. — 1. The peritoneum was irrigated with a saline solution, and immediately afterward with a solution of corrosive sublimate (1 in 2000). No symptoms of mercuric poisoning followed.

2. Irrigation with corrosive-sublimate solution alone was followed by toxic symptoms.

DELPET'S EXPERIMENTS. — Irrigation with saline solution was kept up for ten to twenty minutes. Then more strychnine than would produce tetanus in a control animal was introduced without any symptoms following.

Since treating the cases above described I have had no opportunity of employing formalin in infective peritonitis.

The following cases occurring in the surgical practice of two friends are worthy of note. Their employment of the formalin was at my recommendation.

Case I. (In care of Dr. Boone, Presque Isle, Maine.)—Male. Aged 56. Abdominal section was performed for appendicitis. A large peri-appendicular abscess was found in which the appendix lay as a mass of slough.

The cavity was washed out with formalin solution (about 1 in 500) and drainage kept up with a glass tube for a few days. Each day it was thoroughly flushed out twice with the formalin (1 in 1000). On the sixth day the cavity had shrunk to a very small size, and there was scarcely any discharge.

In two weeks from the operation the patient was practically well.

Case II. (In care of Dr. Boone, Presque Isle, Maine.)—Girl. Aged 11. Was first seen after fourteen days of severe illness, in a very low state. A large mass filled the lower part of the belly, and evidences of peritonitis were present.

Abdominal section was carried out, a mesial opening being first made, through which a large quantity of pus escaped. Another opening was also made in the right flank.

Irrigation was carried out with normal saline solution, and afterward with formalin solution (about 1 in 500), the fluid passing among the bowels from one incision to the other.

The inflamed intestines were also sponged, as much as possible, free of lymph.

A glass drainage-tube was then placed in each incision.

Each day after the operation the peritoneal cavity was flushed out with the formalin solution.

Rapid recovery took place, closure of the incisions occurring very satisfactorily.

NOTE.—In both of these cases some pain was complained of when the formalin solution was introduced. This was probably due to the strength of the solution employed. The latter was not necessary; a weaker solution might in all probability have been used as effectually and with less disturbance.

Case III. (In care of Dr. W. F. Hamilton, Montreal.)—Male. Aged 48. A localized peri-appendicular abscess had been opened and the cavity drained. The appendix was found to be a mass of gangrenous tissue, and it was surrounded with large sloughs. On the day following septic peritonitis was marked, the temperature being elevated

and pulse rapid. On the next day there was abdominal distension, vomiting, and hiccough.

Dr. Hamilton, who was called in consultation, determined to open the peritoneal cavity freely. The incision made at the operation was reopened and a fresh opening made in the right loin. Thorough irrigation of the belly was made with formalin solution (1 in 500), and, afterward, with a weaker solution. Free drainage was kept up with tubes and every day irrigation of the cavity was carried out with formalin solution (1 in 1000).

On the fourth day the abdominal distension was less and flatus was passed. On the fifth day sloughs came away freely from the original seat of trouble. By the sixth day the temperature had fallen to $99\frac{1}{2}^{\circ}$ F. and continued low afterward. The patient made a good recovery.

These cases are of great value in demonstrating the safety of formalin solution in the peritoneal cavity. In the two first described, a very strong lotion was employed by my friend, the surgeon in charge, because of the extreme severity of the disease, both where the infective process was mainly localized and where it was generalized.

There seems little doubt that where inflammatory changes are in progress in the peritoneum stronger solutions may be used with safety than where the peritoneum is scarcely or not at all altered.

But, besides illustrating the harmlessness of formalin, these cases demonstrate its power in checking microbial activity in different varieties of infection, *viz.*: localized sloughing and suppuration, gangrene and diffuse suppurative peritonitis.

The rapidity with which local conditions improved was very remarkable in each instance, and they can only be attributed to the sudden checking of the infective process.

An important feature in the treatment was undoubtedly the making of two incisions, whereby free drainage was allowed, as well as free thorough irrigation with the formalin solution.

This is a most important procedure, especially in the cases where diffuse suppurative peritonitis exists. If two openings are not sufficient, there should be no hesitation in making a third.

ADDENDUM 1.—Clark, in his recent paper dealing with drainage in abdominal operations, has emphasized the various risks attendant upon the use of gauze and tube-drains. One of these risks I wish to notice, *viz.*: infection occurring in the drain-track in cases where it was not present at the time of operation. Though in most cases

this infection leads merely to local trouble, it may be a troublesome complication, and several operators have drawn attention to it.

As a means of preventing its occurrence, I wish to recommend the use of formalin solution (1 in 1000 or 1 in 2000). I have already described how this may be employed when drainage is carried out with a tube.

If gauze be the drain-material, the solution could easily be made to saturate it from time to time.

ADDENDUM 2.—Experiments to determine the effects of chinisol in the peritoneal cavity.

Not long ago chinisol, one of the quinoline compounds, was introduced as a non-toxic, non-corrosive, non-irritating, powerful anti-septic agent.

According to the reports of various experimentors who studied its effects on micro-organisms, its inhibitory influence is manifested even in weak solutions in a marked degree.

Wyatt Johnson, in a report to the Board of Health of the Province of Quebec, Canada, states that chinisol is practically non-toxic, even when used concentrated, and that its power of checking or inhibiting the growths of microbes is very high even in very weak solutions. He points out, however, that it requires very strong solutions to *destroy* the germs. He states that it offers "decided advantages for therapeutic surgical purposes."

I have recently begun a series of experiments on animals on the lines described in connection with formalin.

I.—Influence of chinisol when placed in the peritoneal cavity:

1. Mongrel fox-terrier. Abdomen opened and irrigated with chinisol solution (1 in 500). On closing the incision the belly was left as full as possible. Inside an hour the animal was running about. No ill effects followed.

2. The same experiment repeated, with same results.

3. The same experiment repeated, with same results, a formalin solution of weaker strength being used.

II.—Introduction of infective material into peritoneal cavity, followed by immediate irrigation with chinisol solution:

Terrier. Abdomen opened. Bowel and omentum pinched and scraped in several places, and a fluid culture of staphylococcus aureus introduced. Irrigation was then carried out with chinisol solution (1 in 500), several ounces being left in the belly when closure took place.

Recovery occurred without any abnormal symptoms.

III.—Introduction of infective material followed by irrigation with chinosol solution after the lapse of a period of time:

1. Collie. Abdomen opened. Bowel and omentum pinched and scraped in several places. Fluid cultures of bacterium coli commune and staphylococcus aureus were introduced. Within twelve hours the dog became very languid and lay down most of the time.

Forty-eight hours after operation the belly was reopened. Acute peritonitis was present, there being considerable bloody fluid in the cavity. Numerous adhesions had formed. Those were broken down and irrigation carried out with chinosol solution (1 in 1000), several ounces being left in the belly when it was closed.

The dog remained languid for a couple of days, but made a perfect recovery.

2. Terrier. Abdomen opened. Bowel and omentum injured. Blood allowed to enter cavity. Fluid cultures of bacterium coli commune and of micrococcus flavus were introduced.

Within twelve hours the dog was sick and languid, breathing irregularly, and having diarrhoea.

Twenty-four hours after the infection the belly was reopened. Early peritonitis was present, adhesions having begun to form.

Irrigation was carried out with chinosol solution (1 in 1000), several ounces being left inside when the belly was closed.

3. Terrier bitch. Abdomen opened. A hole was made in the ileum close to the colon, and the bowel contents (fluid matter) squeezed from half a foot of bowel into the peritoneal cavity.

At the same time a fluid culture of bacterium coli commune was placed there. The opening in the ileum was carefully closed.

Some hours after the operation the dog became languid and had shivering attacks.

Twenty-four hours after the operation the abdomen was opened. Early peritonitis was in progress, some serous fluid being present.

Thorough irrigation was carried out with chinosol solution (1 in 1000), as much as possible being left inside when the belly was closed.

The dog was very quiet and indisposed for several days, but recovered perfectly.

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EDITORIAL.

THE PROSPECTS OF THE MEDICAL PROFESSION.

We congratulate our esteemed contemporary, *The Journal of the American Medical Association*, upon a recent very able editorial upon this subject. We believe that, if the profession is to have any prospect at all, this subject in all its bearings cannot be too often nor too generally discussed in the medical press. We have been the first to endeavor to wake the profession from its long-time lethargy, to take its thoughts from mere money-grubbing to a rational view of its status in the community and the morbid vices in its constitution which are surely undermining its usefulness and its prosperity and will as surely lead to its final disintegration. This has been on our part a labor of love, for it is not pleasant constantly to harp upon the faults of one's friends, and like most labors of this kind it has waited long for its reward. For nearly six years we have toiled along this path with little evidence of appreciation and few signs that our words had reached any save indifferent ears. Our contemporaries of the medical press heard us and were silent, suspicious, as human nature is inclined to be—and the medical nature is very human—of the disinterestedness of our motives. At last we are beginning to see our reward and our encouragement lies in the fact that the medical press has taken up this thought, is insisting that the medical public give serious consideration to its vital needs and is pointing out the lines upon which only these wants may be filled and abuses effaced. This union of the press in a common appreciation of the needs of

the profession and its duty thereto comes as a morning of hope, sending its mighty voice as a "reveille" through the sleeping ranks of the profession, bidding it arise and stand shoulder to shoulder in mutual recognition of the necessity of united effort and of self-defence. For it is only when physicians come to recognize the call of the medical press and rely upon and trust it as an authoritative voice, united and devoted to its service, that it will pull itself together and come forth, a mighty army, to work for its common interest.

In spite of the rather optimistic theories on the prospects of the profession expressed by our contemporary, the latter are not bright; they are on the contrary the reflection of a disintegration and mutual distrust so great that they would be hopeless, were it not for one thing. It is to the medical press that the profession must look for help and upon the former lies the responsibility for its regeneration. So great has its inertia become that it cannot be moved by the efforts of any individual within its ranks; only a united, untiring and devoted press can move it.

If there be medical editors who will not recognize this duty, because it is onerous and not profitable to themselves and who would imply that they are not in journalism "for their health" nor for that of the profession, they would better retire from its ranks. They will certainly obtain little more than health and are lucky if they retain that. For the profession is not grateful; it is not even just to those who work untiringly in its interests. We must expect only supine indifference until we have accomplished our work and have gradually forced it to recognize us as a power upon which it must rely. Nevertheless, though we may expect no help from those we would assist, though they may resist our efforts with the passive resistance of a dead weight, no conscientious editor, while he remains in the journalistic field, can fail to recognize his duty to continue the struggle until united effort has met its reward or until it is evident that the profession is unwilling and therefore unworthy to have a press of its own. When it is proven that efforts are in vain, then will be the time to sell our journals to lay publishers and leave the profession in its bondage.

REVIEWS.

Diseases of Women. A Treatise on the Principles and Practice of Gynæcology for Students and Practitioners. By E. C. DUDLEY, A.M., M.D. Lea Brothers & Co., Publishers.

Notwithstanding the unusual number of excellent treatises that have recently appeared upon this subject a volume from so eminent an authority cannot but be read with interest and the experience of so accurate an observer is certain to be of great value to the profession.

The work is divided into five parts, as follows: I. *General Principles*. II. *Inflammations*. III. *Tumors, Malformations, and Tubal Pregnancy*. IV. *Traumatisms*. V. *Displacements and Pelvic Massage*.

This classification is made more pathological than regional in the hope that a more rational idea may be obtained of the sequence and significance of each pathological process; for instance, in considering metritis as closely associated with vulvovaginitis, salpingitis, ovaritis, and peritonitis, a more comprehensive idea may be obtained than by regarding it as an independent lesion.

In the arrangement of chapters ætiological sequence has also been observed.

In Part I., General Principles, the subjects of antiseptics and asepsis are unusually well presented. Septic infection and aseptic technique are given the attention that their importance demands. The chapters upon local treatment in which "an effort has been made to indicate the value of routine topical applications, which are commonly and extensively employed in office practice, to restrict the amount of meddlesome and injurious local treatment to which in many cases the reproductive organs are subjected and to refer these cases to the wider field of internal medicine and surgery" are most useful and timely. While we are not ready to agree fully with the author that "topical treatment has been as much overestimated as systemic treatment has been neglected," the effort to limit local treatment to those cases where it is especially indicated and not employ it as a routine practice is a most laudable one.

Special attention has been paid to the plastic surgery of gynæcology and the result is highly commendable. It is gratifying to find so much importance attached to this branch of gynæcology after

the wave of abdominal surgery that has passed over the country. The subject of lacerations of the cervix and floor of the pelvis, and the operations for their repair, are most ably presented. The author pays a high and just tribute to Dr. T. A. Emmet, whose genius established the pathological significance and surgical treatment of laceration of the cervix uteri and devised the best operation for the repair of the pelvic outlet.

The chapter upon massage after the method of Brandt is a valuable addition to the work, and it is hoped that its fulness and details may lead to a more definite recognition of this important but much-neglected therapeutic measure.

The binding is attractive and the illustrations numerous and well executed.

The book is a valuable addition to the literature of the subject, and we predict for it a large share of popularity. M.

An American Text-Book of Gynæcology, Medical and Surgical, for Practitioners and Students. By HENRY T. BYFORD, M.D.; EDWIN B. CRAGIN, M.D.; WILLIAM GOODELL, M.D.; FLORIAN KRUG, M.D.; WM. R. PRYOR, M.D.; J. M. BALDY, M.D.; J. H. ETHERIDGE, M.D.; HOWARD A. KELLY, M.D.; E. E. MONTGOMERY, M.D.; GEO. M. TUTTLE, M.D. W. B. Saunders, publisher.

The rapid and progressive advances in the science and art of gynæcology necessitate frequent revision successfully to keep pace with the very rapid improvements in methods and details so constantly being made. To maintain the position this book was intended to fill, as its name implies a working text-book for physicians and students, its authors, all of whom are teachers of this branch of surgery in the leading medical schools and hospitals, have endeavored to make this revised edition as nearly complete as would be consistent with a clear enunciation of the practical working of the subject. Much new material has, of course, been added and some of the old eliminated or modified as subsequent experience and practice would seem to justify.

The descriptions of the preparations for each operation and the after-management of patients have all been included in the chapter on "Technique and After-treatment," thus avoiding needless repetition. Notwithstanding the care taken by the editor, a certain amount of overlapping, which is a very difficult matter to avoid in a composite work of this character, has occurred, notably in the de-

scription of plastic work. In the chapter on "Lacerations of the Soft Parts," the operations advised are those devised by Americans and conceded to be the best by nearly all operators in this country. The descriptions of these operations are both accurate and clear and the illustrations very helpful. This cannot be said of the chapter on "Distortions and Malpositions," where the plastic operations devised are those of foreign origin, as Schroeder, Stoltz, Hegar and Tait, and are comparatively rarely done in this country. This arrangement may have been by design, so as to bring out all of the numerous operations devised for the relief of these conditions, but by bringing them together under one heading for comparison and to facilitate reference would seem to be more natural and advantageous generally. The chapter on "Bladder, Urethra and Ureters" has been rewritten and brought thoroughly up to date." Hysterectomy, both abdominal and vaginal, has also been revised and modified where experience has shown the value of improved methods and technique; the same can be said of nearly all of the other descriptions and operative procedures.

The chapter on pelvic inflammation has also been enlarged both in text and illustrations and is one of great practical value.

A large number of old illustrations have been replaced by new ones, most of which are very good, as illustrating methods rather than specimens. It is to be regretted that several of the colored plates retained were not also replaced by others, as the drawings are faulty and the coloring *execrable*.

Of course, there are many things one could criticise—differences of opinion will always exist—but at the same time there is very much to commend and, as a safe, clear, up-to-date, practical working guide, it is a fitting companion to the others of the same series on surgery, obstetrics and practice and will doubtless continue to enjoy its deserved popularity.

E. P. M.

TRANSACTIONS OF THE CHICAGO GYNÆCOLOGICAL
SOCIETY.

Stated Meeting, May 10, 1898.

The *President*, HENRY P. NEWMAN, M.D., in the Chair.

Dr. JOHN M. BEFFEL exhibited a parovarian cyst and an adenocarcinoma of the paroöphoron.

Gonorrhœa in the Female; Rectal Complications.

By JOSEPH B. BACON, M.D.

(See page 398.)

DISCUSSION.

*Implication of Serous Surfaces and Structures Remote from the
Primary Lesion.*

Dr. FERNAND HENROTIN: I regret that Dr. Bacon was not here to read his paper on "Gonorrhœa in the Female." However, I suppose we know something about the subject under discussion, that is, the implication of serous surfaces and structures remote from the primary lesion, and possibly I may be able to advance a few points that will permit of discussion.

In the old times the post-mortems on patients who had died from peritonitis revealed that most frequently they had died primarily from abscesses situated in the tubes, next frequently in the ovaries, and rather rarely, in the cellular tissue.

We have come to look upon the cause of peritonitis as being synonymous with the presence of so-called pus-tubes and ovarian abscesses. Pus-tubes, as we understand the matter to-day, are most frequently the result of gonorrhœal poisoning. A peritonitis that has resulted from a pus-tube may be either serous or purulent, or even fibrinoplastic.

As far as my personal experience goes, connected with what reading I have done on the subject, I believe that primary peritonitis—primary in the sense that it occurs shortly after the primary gonorrhœal infection—is a very rare form of disease. I think I have

seen a couple of cases of primary peritonæal infection; that is, primary in the sense that the chief and prominent symptoms of the disease were those of peritonitis. We might call them cases of early acute peritonitis. It is my impression that this form of disease resulting from gonorrhœa is extremely rare. As a matter of fact, a true primary peritonitis resulting from gonorrhœa is almost impossible. We cannot imagine that a micro-organism can travel through the genital tract and affect the peritonæum primarily; neither can we expect or believe that from any other channel it could reach the peritonæal cavity primarily, but there have been cases of such variety as I am describing at present. I have seen, for example, a patient exhibit himself who had acute gonorrhœa; within four days thereafter I have been called to see his wife suffering from acute pelvic trouble, which in two or three days developed into a condition very much resembling an acute peritonitis. My explanation was that originally the disease had traveled up from the vulva through the uterus to the Fallopian tube into the peritonæal cavity at such a rapid rate that in a few days we had an acute peritonitis, the result of a gonorrhœa. I have seen two such cases in my practice, and looking back upon them I cannot fail to recognize that one of the primary and prominent symptoms of this condition was a good deal of strangury, a good deal of tenesmus, urethritis and cystitis. Gradually I came to the conclusion that the cases I had considered as acute peritonitis resulting from a recent gonorrhœa were probably cases of excessively acute urethritis and cystitis as a result of the acute infection. At any rate, we are here to compare notes, to give our personal experiences, etc.

Personally, I look upon gonorrhœa as an acute disease involving the urethra, the vulva and occasionally the bladder. On the other hand, we have an extremely subacute, almost chronic disease, beyond those points. We all know that vulvitis and urethritis are followed by endocervicitis. We know more from the appearance of the conditions when we examine them by sight. We all remember and thoroughly recognize the picture of the os uteri when affected with gonorrhœa. But I do not know as I can say that we have a very definite picture of gonorrhœal endometritis. We have the symptoms of cystitis, possibly of urethritis, of vulvitis, and infection of the vulvovaginal glands, but what are the symptoms of gonorrhœal endometritis? We may say that we have deep-seated pain in the region of the uterus as a result of infection as well as the result of invasion of the uterine cavity. Next to the inva-

sion of the uterine cavity is the implication of the Fallopian tube and, when this is involved, we have the development of acute gonorrhœal salpingitis and the development eventually of pyosalpinx. Can you describe the symptoms of pyosalpinx? Gonorrhœa presents a definite picture with subjective symptoms characteristic of the disease. Is it not a fact that, passing the original vulvitis in the acute urethral symptoms, gonorrhœa has very few symptoms *per se* for a good while after it has existed? The ordinary clinical history is that a patient may or may not demonstrate symptoms of acute gonorrhœa around the lower parts of the genital tract; that, without feeling very well, they usually and slowly develop into a condition of semi-invalidism without definite symptoms. They usually eventually become constant sufferers from backache, side-ache, and pelvic pain; menstruation becomes, as a rule, more profuse, more painful, more distressing and accompanied with a feeling of greater depression and exhaustion, and within three months, six months, nine months, a year or more afterward the gonorrhœal patient who has had the serous surfaces involved by gonorrhœal poison is at last brought to consult a physician and an examination discovers well-defined pyosalpinx.

That is my idea of gonorrhœa as it extends beyond the uterus, a semi-acute or almost chronic disease leading to few and indefinite symptoms until it involves the structures beyond. We do have acute peritonitis resulting in the most *foudroyant* disease. We have acute peritonitis with the most awful symptoms, leading sometimes to death in a few hours. If you look back upon the history and the peritonitis that is developed in these cases, if you are to judge by the many instances you have seen, and investigate the symptoms, you will find that these cases are secondary infections due to the rupture of a pre-existing pyosalpinx. We all know that a patient with pyosalpinx is never safe and that at any time the gravest of accidents may occur. The infectious material travels so slowly up the tube that Nature is always ahead of it. We have the pathological process confined within the limits of the tube because the diseased process is so slow in its progress that Nature throws out an exudate beyond it, and we have, therefore, the uterine end closed by the inflammatory condition existing for a certain length of time, and the peritonæal opening of the tube closed by the slowness of the original process, thus allowing Nature to throw out a barrier against it, and we have abscesses that are known as pyosalpinx.

It is a question with me whether primary peritonitis, non-trau-

matic in character, occurs from any cause. Of course, we may have primary tubercular peritonitis, but even that is not proof whether the primary lesion was in the peritonæum proper or not, and certainly we never have a primary gonorrhœal peritonitis if we are to judge by the symptoms and history of the case or by the results of an examination.

The term pelvic peritonitis is in common use, and yet pelvic peritonitis in most cases is of secondary importance. We are coming more and more to be accurate in giving to each disease its proper name to show the primary and principal involvement of the disease in question. There is no doubt but that when once the gonorrhœal poison penetrates beyond the place of entrance the Fallopian tube is its most common habitat. This has been proved not only by clinical demonstrations, but by the work of the bacteriologist in the laboratory, showing the presence of the specific virus in the tubes or in the walls of the pyosalpinx itself. The involvement of the serous surfaces comes in secondarily from extension of the disease. I believe that gonorrhœa never involves the ovary except secondarily. When we talk of the involvement of the serous surfaces, and I speak now only of the peritonæum, I have a great deal of doubt as to the part played by gonorrhœa. We have other forms of disease of a lymphatic character. We have ovarian abscesses, where the infectious element is a streptococcus or some other coccus, but not the gonococcus. Frequently the bacillus coli communis will produce ovarian abscess and pelvic peritonitis. We have peritonitis of the serous, adhesive form, the exact pathology of which I, at least, have been unable to determine, but cases of this character are not gonorrhœal and gonococci are not to be found. So I consider the involvement of serous surfaces, the so-called pelvic peritonitis, is not strictly a gonorrhœal disease, but rather an accompaniment of the inflammatory conditions that originate in pyosalpinx.

As regards the cases of peritonitis that are directly due to gonorrhœal poisoning, as far as I can see, and my observations are based on considerable experience and thought in this matter, they are nearly always the result of secondary ruptures. When we have a pyosalpinx so distended that it ruptures its walls, or when its attachment is so slight because not sufficient exudate is thrown out, and it leaks in one direction or another, then we have pus elements in the pelvis. The disease may be gonorrhœal in character; it may be a streptococcus or mixed infection that produces the most terrible results; but in most of the cases there is secondary rupture into the

serous cavity of a pre-existing well-determined disease, not especially the result of any specific form of virus. In that sense we may look upon gonorrhœa as involving the serous surfaces, just in the same sense that we do any infectious mass in the pelvic peritonæum, having ruptured at some point, and the infectious element of whatever character may produce peritonitis.

I do not know just how far it is intended that I shall speak on this subject, but as the paper of the evening on gonorrhœa in the female happens to be missing, I shall avail myself of a little more latitude.

I shall now say a few words upon the differential diagnosis of pelvic peritonitis of gonorrhœal origin and other forms of infection. I divide the two pathological conditions that give rise to septic infectious diseases in the female pelvis, as far as the subjective symptoms are concerned, something like this for the purpose of giving you my views upon the differential diagnosis: The gonorrhœal disease, unless we talk about vulvitis and the accompanying acute symptoms is a slow chronic form of disease invading the Fallopian tube particularly and forming a pyosalpinx. The other variety of the disease, which is more common in the female than all others, is the puerperal variety, which, in my opinion, almost always travels not by the mucous surfaces, but by the lymphatics, and usually by absorption starting from the lymphatics of the cervix. In a certain number, and I believe the larger number of cases, the infection travels up the lymphatics direct to the ovary, and a well-defined case of ovarian abscess is produced in a very short time. In the gonorrhœal variety we have a subacute, almost chronic condition, with hardly any perceptible symptoms that eventuate in the development of pyosalpinx. In the puerperal variety of the disease we have an infection that travels up the lymphatics, affects the ovary very frequently or the cellular tissue of the broad ligament. The infection is extremely rapid in its course and eventually terminates in suppuration. When we speak about puerperal cases we speak as well of those cases that are the result of manipulations and of bad operations, resulting in infectious material being introduced from the outside, and not of the gonorrhœal variety. If a woman, considering herself pregnant, introduces a catheter into the uterus and sets up an infection or resorts to an intra-uterine application, which is followed by high fever and well-defined infection; if a woman has a miscarriage, and it is followed by infection, in this class of cases the infection usually travels by the lymphatic channels. The gonor-

rhoeal cases are subacute until they develop into pyosalpinx. If a woman has had a catheter thrust into her that is unclean, she is likely to develop a high fever within twenty-four or forty-eight hours, and within a week there will be pus in the ovary. I do not think the great mass of practitioners realize how quickly suppuration occurs in the pelvis; yet a proper recognition of the elements in each case, as well as the subjective symptoms, will enable one to make a differential diagnosis and very frequently apply the proper remedy. If a woman, who has been perfectly well, becomes infected, she develops a high grade of fever, a sore abdomen, etc., and you have all the elements that go to make up a lymphatic invasion with, in a large proportion of the cases, the formation of an ovarian abscess. I simply mention this in connection with the subject as being a help to differentiate between pyosalpinx and the ravages of gonorrhoea in the pelvis and the lymphatic invasion. I do not hesitate to say that I have more than fifty times simply made a slight incision in the vagina and opened an ovary containing pus, and at the end of several days I have seen these women perfectly well. Once an infection of this kind has started, no one can tell when and where it will stop or how much damage it is apt to do. The pyosalpinx of gonorrhoea, in my opinion, is of slow growth; it does not develop in a short time. If the pathological condition is situated 'higher up, unless it is in the cul-de-sac, it is more difficult to cure, because the walls are infiltrated, the micro-organisms have penetrated the thickness of the wall, and instead of having a simple case to deal with we have an old and well-established disease. An ovarian abscess may exist as the result of gonorrhoea, but in my opinion it is the result, usually, of the extension of a pre-existing pyosalpinx.

I do not know whether I have made myself plain in these impromptu remarks or not, but I have tried to advance a few ideas with reference to the pathology of these different conditions.

Dr. L. L. McARTHUR: Like Dr. Henrotin, I find myself in an embarrassing position from the fact of not having read the paper on the subject under discussion. I think it important to call to mind the biological peculiarity of the organism inducing gonorrhoea in the female. In by far the larger proportion of cases it flourishes best on the columnar epithelial-lined surfaces. Next in luxuriance of growth on the stratified compound pavement epithelium, such as the vaginal tract, and finally with the least growth and with the greatest difficulty it proliferates on the single flat-cell layer-lined surfaces; hence it is that we find gonorrhoeal inflammation extending vigorously

along all of these tracts lined with the columnar pavement epithelium. Less vigorously it grows along the compound epithelium, and still less vigorously, more circumscribed, and far more chronic in character, along a single layer of flat cells. The majority of serous surfaces invaded by this micro-organism are circumscribed in character. We have no well-recorded cases of general peritonitis from the gonococcus alone. Two cases have been reported this year that were claimed to be caused by this micro-organism, but the micro-organism could not be demonstrated in them. We see frequently, it is true, a leaking of the gonorrhœal tube, inducing a circumscribed peritonitis. I believe the repeated attacks of "pelvic peritonitis," so called, are more frequently due to a pure culture of the gonococcus than to any other variety.

The subject assigned to me referred to the serous surfaces more remote, and other structures, and in refreshing my memory I recall two cases in which the gonococcus induced a suppurative joint inflammation in a new-born babe during the first week, accompanied by ophthalmia neonatorum. This peculiarity is true of the gonococcus involving joints, that when the effusion it provokes is of a clear, transparent character, the trouble will, even though it be subacute or chronic in character, get well. When the effusion is of a translucent or semi-opaque character, the difficulty of effecting a cure is enhanced, and when pus is present in a joint, beginning with a history of gonorrhœal trouble, we find almost always, but not always, the staphylococcus accompanying a mixed infection. Clinically, we may divide gonorrhœal joints into those which are characterized by the nature of their effusion, and we will find beneficial treatment, when the effusion is semi-opaque or typically purulent, by resorting to definite surgical procedures. The gonorrhœa may have affected almost all joints of the body. It usually presents a monarticular manifestation but is frequently multiple. During the past year there have been found in the literature reports of such cases as this, and I will say that the majority of them, in my mind, are rarely caused by gonorrhœa. But given a case with a stricture of the urethra, an instrument passed for determining that fact, the patient immediately taken with a chill, has high fever following, and in a few days the knee, ankle, wrist, shoulder, and other tissues of the body are invaded with multiple abscesses, a genuine pyæmia in appearance, and yet from each of these abscesses nothing but gonococci are found; so that it occasionally happens that the gonococcus induces a general articular pyæmia with a fatal outcome, and yet no

other organism is demonstrated. I mention this especially, because the gonococcus in the soft tissues is not ordinarily a pus-producing organism. It produces pus more frequently on the columnar epithelial surfaces than any other. It has been my misfortune to have had such a case. The membrane which lines the pericardium and the heart by irritation of this organism has produced pericarditis and endocarditis with vegetations, and a fatal issue not infrequently takes place in these cases. The pleura has been found to contain the gonococcus and the effusion to be of a semi-opaque character mixed with leucocytes.

Outside of the gynecological aspect, it strikes me the subject is not of special interest here but for the clinical fact of differentiating the nature of the gonorrhœal joints by examining the fluids and modifying treatment by opening and washing out the joint or joints, as the case may be, with a weak bichloride or other antiseptic solution.

Vesical Complications.

DR. LESTER P. FRANKENTHAL: To Werthheim next to Noeggerath and Neisser is due most credit for our present knowledge of the biology of the gonococci. He established the possibility of a peritonitis, a parametritis, and lymphangitis, the invasion of cylindrical epithelium, and even permanent epithelium in the young and old, ovarian and tubal abscesses, and, finally, cystitis, caused by the gonococci.

The old teaching that gonorrhœa may occur primarily in the chronic state in the female is looked upon as absurd. Werthheim reinfected the urethra of a patient, suffering from gonorrhœa for two years, with no result; taking the same virus (chronic) on a healthy urethra he produced an acute infection. The presence of a gonococcic toxine is clearly demonstrated by Finger, Wasserman, and Shaffer, but at the present time they are unwilling to prophecy its therapeutic value.

Schultze found gonococci in 174 patients 104 times: 78 times in urethra; 81 in cervix; 14 in Bartholin; 14 in rectum; 9 in vulvo-vagina; 7 in uterus. Baum in 74 cases: 93 times in urethra; 70 in cervix; 23 in uterus; 10 in tubes.

Steinschneider found the urethra affected in forty-seven per cent., Horan in seventy-five per cent., and Baum in ninety per cent. Fischer found the gonococci in 50 cases out of 54 in children suffering from vulvo-vaginitis.

Skutsch speaks of an epidemic in 1890 caused by a public bath. In 14 days he found 236 girls, ranging from 6 to 14 years, sick with gonorrhœa.

Cahen Brach reports 25 cases of urogenital blenorrhœa in little girls; they found the urethra affected 23 times. They claim that in children, at least, urethritis is rarely absent as a complication.

Nearly all authorities agree that the urethra is the chief site of gonorrhœa in the female.

In so much as gonorrhœal urethritis is always present if a cystitis exists, the reverse, however, not being true, I shall in briefly outlining the symptoms and therapeutics speak of them as one.

The symptoms of acute gonorrhœal urethritis are at first a smarting, itching, and painful tickling, frequent desire to urinate, vesical tenesmus, but act of urination frequently accompanied by a few drops of blood (the blood you will observe is not mixed with the urine as in hæmaturia). Urination is painful, scalding, burning. Chills and fever are present. Last symptoms, in part or as a whole, rarely last longer than a fortnight. Locally, we find the genitals swollen, excoriated; this greatly in proportion to the individual sensitiveness of the skin, the hair on the external genitals matted together by a creamy yellow-greenish discharge; on separating the same we find the external meatus of the urethra swollen, the meatus filled with secretions unless the patient has just urinated, the urethral mucous membrane red, angry, and prolapsed. If urination be divided into two acts, and the urine collected separately, the first will be cloudy, the second clear, providing no cystitis complicate the urethritis.

The symptoms of the chronic form are less subjective, nearly all objective excepting when an occasional exacerbation occurs, as about the menstrual period, or through dietary errors, excessive sexual indulgence, etc.; then the urethra seems to become reinfected from gonococci contained in the glands and ducts of the urethra. The secretions are no longer creamy, but more liquid, no longer greenish-yellow but more grayish-white and far less abundant in quantity; so much so that it may become necessary to milk the urethra to obtain the same, which may be done in women from the vagina, in children by pressure from the rectum toward the perinæum having separated the labia. Even then—in children—we may not be successful in obtaining secretions and may have to resort to the platinum-loop scraper along the urethra for culture purposes. The external parts may be erythematous eczematous. In addition, the

chronic form may be accompanied by strictures of the urethra. Then the act of urinations—in proportion to the caliber of the structure is: (1) difficult; (2) the stream of urine is interrupted (miction a diut fois); (3) maldirected, deviating to one side or the other.

If either of these groups of symptoms are accompanied or followed by one-sided or bilateral intense lumbar pains, vomiting, headaches, pus and casts in the urine it may be taken for granted that the infection has spread upward along the ureters to the pelvis and parenchyma of the kidney.

Cystitis in children is usually transitory, since the urethra rarely contains mixed infection. Hæmorrhages in the chronic form are more intense on account of the pathology of the bladder. Symptoms may be so slight in the chronic form that patient may know nothing of the existence of disease.

The therapy consists: (1) In the use of such drugs as do kill the gonococci in weak solutions that will not injure the surfaces to which they are applied, such as will not become inert through their combination with the albumen and mucin; (2) an even, or better, a perfect application of the drugs to all the surfaces diseased; (3) treatment at just the right time, never in the very acute stages; (4) the avoidance of everything that may cause an exacerbation of the affection; (5) the avoidance of metastasis by free drainage and absolute rest; (6) prophylaxis.

Urethritis, on account of the absence of an external sphincter, is difficult of treatment in the female. It is likewise not easily accessible on account of the folds in the urethral mucous membrane and the many glands and follicles.

In the acute stages insist upon mental and physical rest, plain, non-irritating diet, sitz baths with or without chemicals, such as permanganate, copious drinks of alkaline mineral waters, linseed tea, decoctions of uva ursæ. Attention to the bowels, and possibly ice applications, or the use of Lister's cooling tubes per vaginam.

Fluid extract of hyoscyamus has done me better service than any other drug or combination of drugs to quiet the pain and violent tenesmus. I give it in large doses (10 min.) every three to four hours, providing there be no contraindications established by an idiosyncrasy.

External applications of lead water with or without opium are gratefully borne when œdema and erythema exist. Salol, salicylate of soda, oil of copaiba, cubebs, and turpentine are frequently administered internally. Ergot when hæmorrhage exists. In children,

avoid infection of eyes by the child's hands. In the chronic form I have had best results from ichthyol bougies. Formerly I used to employ and quite extensively so, instillation from nitrate of silver, one to two per cent. In mild cases, for irrigation I rely solely on the permanganate of potash, 1-4000, and in the very obstinate cases I use cynos, 1-2000—oxycyanite of mercury, Thiersch, formalin; bichloride of mercury I have never tried. Of argonin, argentannin, I will say nothing more than that I believe that they have not come to stay. Kelly's treatment with rubber balloons is worthy of mention. It is best when treating the urethra to have the patient's bladder distended with urine or fluid so as to avoid infection of bladder and I irrigate urethra first before evacuating locally. It may become necessary to treat the ducts, if accessible, separately with a fine silver probe filled with nitrate of silver or with a fine galvanocautery point. In the very obstinate cases of cystitis it may be necessary to make a (artificial) vesico-vaginal fistula.

Schmidt reports a case of gonorrhœa in a child 3 years old. Œdema of labia was present; discharge from vagina and urethra. He found gonococci. On the sixth day erysipelas of the thigh developed; two days later the discharge had disappeared, and at the end of two weeks patient had completely recovered from both the erysipelas and gonorrhœa.

The pathology of urethritis is simpler in the female than in the male, due to the shortness of the urethra ($1\frac{3}{8}$ inches), its straighter course, and the less complicated anatomical construction. In its lower three-fourths it is closely adherent to the vagina, in its upper fourth cellular tissue is interposed. The simpler pathology of the urethra makes cystitis, urethritis, etc., rarer.

To repeat, the urethral meatus is swollen, bluish, œdematous; the mucous membrane of the urethra scarlet and thickened. In the chronic nearly all this has subsided. Skene's tubules, running parallel to the long axis of the urethra (three-eighths inch long) still contain the gonococci, and so do Sanger's glands. The urethra is decidedly thickened, due to increased connective-tissue formation. The mucous membrane of the urethra is no longer symmetrically swollen, but rather in spots. Sanger wishes the urethritis divided into urethritis maculosa externa, urethritis chronica, urethritis with strictures, peri-urethritis (urethra size of finger).

He lays special stress on the macula as being pathognomonic of gonorrhœa, for instance, about Bartholin's glands. In cystitis the mucosa is swollen, studded with pale-red, gradually fading spots,

the mucous membrane in between being normal (Shauta); especially marked is this about the trigonum and ureteral openings, so that these latter may even be obstructed (Kelly). In the chronic form these spots may form into ulcers with bright-red granulating base (source of hæmorrhage). Werthheim found gonococci in the mucous membrane of the bladder, in the capillaries, and in the veins.

In one case reported by Brewer, where the patient died and a post-mortem was made, numerous small abscesses were found in the kidneys and lungs. Iliac and femoral veins were filled with red thrombi. Cultures from the spleen, kidneys, and lungs showed staphylococci and streptococci, and an utter absence of gonococci. Originally the case was one of subacute gonorrhœal seminal vesiculitis.

The pathology of the urinary organs in gonorrhœa consists of an acute and chronic urethritis, peri-urethritis, with or without abscess formation; acute and chronic cystitis, ureteritis, pyelitis, and pyelonephritis.

The streptococci and staphylococci, on culture, outgrow and destroy the gonococci in a few days.

Résumé.

1. Frequency of the affection of the urethra.
2. Frequency of urethritic gonorrhœa in children.
3. Absence of symptoms in chronic form may cause it to be overlooked.
4. Disease of the bladder, ureter, and general metastasis are rarely pure gonorrhœal infection.
5. Never treat locally the acute form of urethritis.
6. Warn against infection of eyes, use of general bath-tub, toilet wash-rag, etc.
7. The diagnosis should always be made by means of the microscope; a negative diagnosis never unless through cultures.
8. The destruction of the gonococci by Fehleisca's bacillus in the case reported and by the streptococci and by staphylococci on cultures, may be a therapeutic hint for the future.
9. (1) If the secretions from the male urethra contain gonococci, the wife in all probability will become infected, and if so, hers will be an acute gonorrhœa.
- (2) If now the husband were to undergo treatment and be cured, his wife still remaining diseased, he again will become infected and will suffer from the acute symptoms of the disease.

(3) If neither undergo a cure, then the interchanging gonococci accommodate themselves to each other and their culture-media and the process becomes latent. (Werthheim.)

Gonorrhœa as a Factor in Puerperal Sepsis.

Dr. A. H. BURR referred to the influence of surgical asepsis and bacteriology in modern obstetrical practice. Still, there were frequently sources of danger within the mother herself, antedating childbed, which ordinary methods fail to avert. The Gram method of staining for differentiating the gonococcus, and Werthheim and Brunner's culture methods have demonstrated the multiple rôle of this germ in its capacity for pathogenic mischief. He reviewed its biology to show its dangerous character in the opportunities opened up in childbed. Its ability to acquire virulence after periods of latency; its predilection for ciliated columnar epithelium of the endocervix, endometrium, and tubes. Its power to invade almost every tissue of the body and its persistence in favorite localities, its character as an irritant pus-germ, and its resistance to immunity all constitute it a dangerous organism in childbed. It is not only a menace in itself but its presence favors the growth of mixed infections even more dangerous.

It is estimated that ten to thirty per cent. of all women become gonorrhœic. Many of these remain uncured. Furnier's statistics showed that one-fifth of his cases developed salpingitis. Fehling says absorptive fever is not rare in patients suffering from gonorrhœa. Parturition opens up many channels for pure or mixed infection on account of pre-existing gonorrhœa in any of its stages. A ruptured perinæum, a vaginal erosion, a lacerated cervix, a denuded placental site are so many open gates for sepsis. Diagnostic points are: (1) Mucopurulent discharges from urethra, vagina, or cervix. (2) Vulvar abscess or discharge on pressure of glands of Bartholini. (3) Ophthalmia of babe. (4) Arthritis with pyrexia during gestation or puerperium make the diagnosis of gonorrhœa highly probable.

Treatment.—(a) Prophylactic: General, educational, legislative regulation of marriage laws. (b) Specific: The treatment of a female known to be gonorrhœic should be conducted more persistently and carefully than in the male because of its more dangerous consequences to her. It is unfortunate that this disease is so often overlooked in women. Drainage of abscesses, antiseptic irrigations, and

curettage when infection takes place at the time of or during gestation, much can be done to avert childbed complications. Inspection a month before childbed should be had. - The sanitary condition of the parturient canal and related organs should be known to the physician in every case of pregnancy in order to free the mother from all preventable dangers. Permanganate irrigations and topical applications of silver solutions preceding birth are useful. Post-partum irrigations in every known case of gonorrhœa is justifiable. If symptoms of endometritis develop, intra-uterine antiseptic irrigation should be used.

Deductions: (1) Gonorrhœa is directly or indirectly a factor in puerperal sepsis, and accountable for a larger percentage of complications and fatalities than is commonly supposed. (2) Prophylactic measures, general and specific, are most important in averting the septic dangers of childbed.

GENERAL DISCUSSION.

Dr. JOSEPH ZEISLER: I must confess that in coming here to-night I understood that my senior colleague (Dr. Hyde) would be here to relieve me of the burden of this special feature of the discussion, and with that expectation in view I have made no special preparation for this occasion. However, I have some notes prepared for a similar occasion on this subject, and perhaps some of them may be of interest to repeat here. I really do not know whether or not gynæcologists are especially interested in seeing this disease eradicated, because, it seems to me, if gonorrhœa were thoroughly wiped out nearly three-fourths of the work of the gynæcologist would be superfluous. I must confess that while for many years I was very enthusiastic with regard to this subject, my ardor concerning it is gradually waning. Four or five years ago I could find myself warming up on this question, discussing it vigorously, but when I see from year to year the vain efforts that have been made and are being made by the profession to eradicate or control this disease, it seems to me all the work done in this direction is utterly hopeless. The best thing for one who stands alone in this matter is to drop it. I see no reason why gynæcologists should not do as much toward the prevention of this disease as any other class of physicians or specialists, because they surely have humanitarian principles. They see as much of gonorrhœa as anybody else, and certainly ought to be interested in the hygienic part of the subject. It is hardly necessary

to state before this audience that the most dangerous sources of gonorrhœa are derived from public and clandestine prostitution. This goes without any criticism. For the sake of brevity, I will refer to the remarks made by me a few months ago. In speaking of prostitution I said, that prostitution exists among us, and history has shown that it has existed at all times and among all peoples of the globe, and I am afraid it will persist forever. I have nothing to say against those well-minded humanitarians who, in the face of past experience and the tremendous barrier of historical facts against which the most powerful of kings and popes have fought in vain, are still continuing their warfare against prostitution. We may earnestly hope that reforms in education, the vigorous and successful efforts to raise the social and economic standard of women will bear good fruit, in diminishing if not wiping out this disease. Let us continue, as we have done in the past, to exercise our influence in individual instances, to foster a better moral tone in the young men with whom we come in contact; but in the meantime, let us not overlook the fact that prostitution is still here and demands our earnest attention as sanitarians. For while many a case of syphilis or gonorrhœa may originate elsewhere, the fact remains that public as well as clandestine prostitution is chiefly responsible for the spread of these diseases. Shall we remain indifferent to this fact, or shall we try to exert a better influence? and how shall it be done? I have given this matter much thought; I have earnestly read the extensive literature upon this subject, have examined impartially the facts and arguments that have been advanced and listened patiently to those who did not agree with me, but I have failed to see any other means of diminishing the pernicious effect of prostitution but that of regulating and supervising it by sanitary and hygienic measures. Mark well, I do not speak of licensing prostitutes. This word is so easily misunderstood. What I desire is medical surveillance. I am not an idealist; I do not believe that even a daily examination of all prostitutes could surely prevent all cases of syphilis and gonorrhœa. But the discovery of a contagious disease in only occasional instances of syphilis during its florid, condylomatous stages, of an unmistakable case of gonorrhœa, which, if left alone, might be spread to an untold number of victims would be of sufficient value to the community. Because we cannot eradicate this disease entirely, shall we do nothing? If medical supervision would annually save a few thousand cases of venereal disease, would it not be worth while to try it? It has been said that the examinations of prostitutes by medical men

do not amount to much. They do, if properly performed by well trained and properly equipped physicians. Even a hasty inspection on the part of an expert will disclose the more flagrant symptoms of syphilis. On the other hand, in cases of gonorrhœa, nothing short of a microscopical examination of the secretions can furnish positive data. This is actually done and regularly repeated in Breslau to-day under Neisser's personal direction. It is true, some prostitutes may object to examinations by male physicians. If so, let us give special training to our female doctors and have them attend to these women. In this connection, I wish to say that one of my former lady pupils is at present studying under Neisser, and not long since she wrote me a very enthusiastic letter regarding the facilities there for the study of venereal diseases. Again, there are those who object to limiting medical examinations to the prostitutes; who would like to have the male offender looked after first. A capital suggestion. I have no personal experience as to the location of some of these famous houses of disrepute, but I am told that some of them are luxuriously appointed. Why should not the inmates of such places have their own physician to examine visitors for their own protection? Or, as it might be difficult to find doctors for such positions, why not insist upon a certificate of good health in every instance? At all of the international conferences where the subject of prostitution has been discussed, there has been a good deal of debate as to whether prostitutes should be allowed to select their own quarters, or be housed in special "maisons tolérées." Arguments have been advanced on either side. Both systems, it seems to me, are pernicious. In the first instance, prostitutes are liable to invade respectable neighborhoods. It is difficult to locate, and, if desired, to examine and control them.

In the brothels they give up their personal freedom and forever lose the return way to decency; also, this establishes a sort of trade, the keepers constantly trying to replenish and rejuvenate their stock. As an example, the city of Bremen might be mentioned, where all prostitutes are forced to inhabit a certain street which ends blindly, and where a great many difficulties are encountered in the frequentation of this place. How is it here in Chicago? Streets, which ten or fifteen years ago were above suspicion or doubt in this respect, are to-day practically infested with bad women, presenting at times a most scandalous aspect. If necessary, I am ready to prove what I say.

As I have expressed myself elsewhere, I believe that the preven-

tion of syphilis and venereal diseases rightfully belongs to the functions of our Health Commissioner. He who attends to the matters of contagious diseases, of vaccination and revaccination, of defective milk-supply, etc., should have supervision over the control of venereal diseases. This question requires much thought and study, but the Health Department should take a firm stand, and I believe that the man who will inaugurate energetic action in this field will erect for himself an everlasting monument.

Dr. ARTHUR R. REYNOLDS: The profession very well understands that gonorrhœa is a serious disease. There was a time when they did not understand that. The public does not yet understand it. It is a common thing with all of us when we come across some error in which the public is interested, to first think that a law ought to be enacted. Those who have had experience in trying to enforce laws frequently come to the conclusion that laws alone are far from being effective. For instance, in the enforcement of vaccination (I think we have a better vaccinated public in Chicago than anywhere else in this country or any other), the protection was not secured directly because of the law. It was not secured by using the police power of the State, but through persuasion. Vaccination has had a long history of growth toward perfection. The medical profession for a hundred years has been advocating it and practising it. It is now accepted by the public, and all that is required to be done is to persist and persuade and every one can be vaccinated. Public officials need not take to themselves much credit for this, because it belongs to the whole profession.

Gonorrhœa is a preventable disease, but how to prevent it is the question. I do not think any of us are sure on that point. I certainly am not. I cannot claim to have any more knowledge on this subject than any other member of the profession, because no attempt has ever been made to supervise or suppress venereal diseases in Chicago by the authorities, to my knowledge. The danger in the enactment of laws for the prevention of this disease lies in the fact that they may be too far in advance of public opinion, and consequently would not be kindly received. When the public learns of the great ravages of this disease that we have heard related here tonight, and which the profession so well understands, it will be a much easier problem. How is the public to find out about it? A well-considered law would be of service. I think its chief service, however, would be as a radiating point from which knowledge shall spread to the public. There are few people, if they understood the

dangers from this disease, but would recoil from communicating it to others. I am speaking now, of course, of gonorrhœa, and I can scarcely conceive any one so depraved as to knowingly communicate syphilis to another.

I have not given this subject very serious thought, but I have a few ideas about it, gained from thinking of other communicable diseases. First of all, I am not so pessimistic as Dr. Zeisler seems to be. I believe a great deal has already been done toward the prevention of gonorrhœa. I, myself, know of two instances where parents whose daughters were about to marry, have seen to it and have secured a proper guarantee from a medical authority, that the expected husband was free from all venereal disease. This phase of the subject is developing, and it is bound to grow step by step till the public understands it as we do. Meetings like this, for the purpose of discussing this subject, are valuable. I believe a great responsibility rests upon the profession in reference to this and other diseases from a sanitary standpoint. I believe if medical men of this Society were to address audiences of men on the subject, as to the ravages of the disease, the public would soon learn to protect itself. The medical women could address audiences of women. Mixed audiences cannot well be addressed by either sex upon a subject so delicate.

Laws regulating matrimony have been advocated, and I believe one has been passed in Ohio recently. This is an evidence of the growth of knowledge on the subject. I do not know whether much will come from it or not but it is pointing in the right direction. I have some doubt about it, because the public are very jealous of any interference with what they regard as their personal liberty and privilege. They naturally object when the State lays hands on the person. This reform might do in some countries but I do not think it will be a complete success in our country till the public knows the need of it. The police power did not succeed in the forcible removal of patients to hospitals of isolation for smallpox. It wholly failed in Milwaukee and in Detroit, and we had incipient riots brewing here because of that interference. But when we had provided sufficient room for patients in the last epidemic we got them all removed to the hospital. It was not done by the use of the courts, not by police officers, but it was done by persuasion. We realized that there was some influence in the community by which we could reach and overcome the most prejudiced, and this influence we obtained. So it is with reference to the disease under discussion. There are influ-

ences that can reach everybody and they should be sought out and applied.

In a paper read before the Chicago Medical Society some two years ago by Dr. Burr, he advocated the enactment of a law making it an indictable offense for any one to communicate a venereal disease to another. I believe such a law should be enacted, and that it could be enforced with a fair degree of success. I believe with Dr. Zeisler that if the city undertook to examine all the prostitutes, it would make some headway toward heading off this disease. The real remedy, however, I believe, is in the education of the public. This is an interesting topic, and I think it ought to be discussed more frequently and freely.

Dr. WILLIAM A. PUSEY: I have nothing to say except to express my agreement with the position taken by Dr. Zeisler, and to add that I am a little skeptical as to the optimistic suggestions of Dr. Reynolds. As to education in this matter, I believe the better part of the population is already thoroughly educated as to venereal diseases, and those who dread them most still contract them. As to every member of the human race having an abhorrence to spreading such a disease as gonorrhœa, I see every day people whom I try to tell the damage they are liable to cause by spreading this disease, but they take very little cognizance of what we tell them, so that I believe we are absolutely without any hope along the line suggested by Dr. Reynolds.

Dr. F. KREISSL: I wish to say but a few words on this subject. The remarks made by Dr. Zeisler remind me that the question how to prevent the spreading of venereal diseases, and especially of gonorrhœa, has been discussed time and again in the various medical associations abroad, and particularly in Vienna. The city administrations and public-health officials have taken a hand in it also, but very little was accomplished. It was deemed best to regulate prostitution by control through the city health officers and the police department.

In Bremen they have a still more rigid control over the prostitutes by confining them to a certain street called the Bremer Controlstreet. The system, according to official reports, works all right and does all that can be expected.

From my personal experience and from what I have heard and read on the subject for nearly fifteen years, I feel inclined to believe that the danger does not so much exist in open as in the secret prostitution, and the explanation is very simple. The inmates of the

houses of prostitution have a certain circle of acquaintances, and when they contract a contagious disease they try to get cured as quickly as possible for fear of losing their customers. Whereas, those who carry on secret prostitution for some reason or other may attempt to conceal their disease, and more often they do not know at all that they are diseased. And those are the sources from which most of the venereal disorders emanate and are propagated. Whether a remedy can be found by law or not I do not know.

The principles laid down by Dr. Reynolds in regard to education of the people are correct. It will do much more than any law. I have listened to the remarks of the other speakers with great interest and there is only one point on which I wish to speak. In most of the papers the opinion seems to prevail that gonorrhœa, notwithstanding other reasons, is so much dreaded because there is no positive and reliable antigonorrhœicum. Dr. Frankenthal does not believe the silver-salts efficient. In contradiction I would like to state that we possess in the silver-salts the most positive and the most powerful and reliable antigonorrhœicum, and that I have seen very many good and quick results by properly using them.

Dr. FRANCES DICKINSON: With reference to the regulation of prostitution, we are told that we get our best statistics from Germany, and it is said that eighty per cent. of the males are affected with gonorrhœa. If this be true, what was the percentage of those affected with the disease before hygienic measures were undertaken. In public prostitution in this country are not the Madames, from economic considerations, as well as the inmates, looking after their interests to-day much more reasonably than is being done in the Old Country under legislation, where once a week, or every two weeks, the inmates undergo an examination, sometimes oftener? The economic phase of the question, as hinted at by Dr. Zeisler, is fairly well settled. I agree with Commissioner Reynolds that this disease does not properly belong to us from a public standpoint, except from the standpoint of contagion, and why then should there be any law regulating it in any way that should have any sex consideration whatever?

A regulation suggested by Dr. Burr would remove from the open streets the perverts, male and female, who do much destructive work among the young people about our schools and elsewhere.

Dr. JOSEPH ZEISLER: In connection with the remarks made by Dr. Dickinson, I wish to quote the famous words of my teacher—Billroth, who said that statistics were a hetairas and lied, and I am

afraid the statement of Dr. Dickinson, if allowed to pass without contradiction, namely, that eighty per cent. of the males in Germany were affected with gonorrhœa, would create a wrong impression.

Dr. DICKINSON: The statement was made by a member of the Chicago Medical Society not long since, and that was where I got the percentage of males affected with gonorrhœa.

Dr. ZEISLER: Eighty per cent. of them may have had at one time or another gonorrhœa, but that does not mean that they have it all the time. Eighty-five per cent. of the males in Germany may have had gonorrhœa, but they get cured, and taking the whole population into consideration, eighty per cent. may have had this disease once, at some time during their lives. I have nothing to do with statistics in the consideration of this subject. If all prostitutes were kept in houses it would be a good thing. Even if examinations were conducted twice a week, we will find now and then cases capable of spreading the disease. I have seen women come from these houses with the most virulent forms of venereal disease, and I have had considerable experience along this line of work.

Dr. A. H. BURR: Let me say a word or two before the discussion is closed with regard to the legislative feature of the question. Dr. Reynolds has made the statement that laws are in many instances ineffective or dead letters, and that many reforms are carried out not because there is legislation upon the subject. He speaks of persuasion as being more effective than force. The masses of the people are not educated concerning the ravages of gonorrhœa. As physicians we discuss these matters, and read papers upon them in our societies. We have an abundance of literature in our medical journals on these subjects, but the public does not see these contributions. There is no public education in these matters.

A law, for instance, regulating matrimony would be a good thing. A law which says that nobody shall receive a license to marry who has not subjected himself to an efficient medical examination to determine the question of whether or not he is capable of spreading a contagious disease, not only gonorrhœa, but also tuberculosis and syphilis, would arrest public attention as nothing else could. I want to make this point, that a statutory law, whether it is enforced or not, is an educator. When a law is passed making a certain thing a crime, or preventing certain lines of action being carried out where certain conditions are found to exist that are detrimental to innocent persons or to the community at large, just so soon as that law is

placed on the statute book it is an educator, and calls the attention of the public to the fact that there is a danger signal. It is through the men largely that disease comes to the innocent through matrimony. It is through the men nine times out of ten. Whenever there exists a statute which prevents men from spreading contagion; prevents them from procuring a license to marry if diseased, it will prove an excellent educator, and this matter then would come to be talked about publicly and commonly, and the public would become awakened to the real nature of such matters. We cannot talk this thing to the public on the street corners; we cannot go into pulpits and preach these matters to the people, and there is no means of the public getting hold of the facts except through medical men, and except through false and pernicious literature circulated by charlatans and quacks.

Such a measure as Dr. Reynolds has alluded to was introduced before the legislature of Ohio this winter, regulating the matter of issuing of licenses to marry. When these questions are legislated upon in all of the States the public will soon become aware of the ravages of these diseases and understand how to prevent them.

DR. LESTER E. FRANKENTHAL: I would like to add a word or two to the remarks of Dr. Burr regarding infection from gonorrhœa in the puerperium. I have frequently seen men of prominence in the profession manifest carelessness in the delivery of the afterbirth by Cr  d  's method and I recall one, possibly two cases, of acute gonorrh  al peritonitis with subsequent death from mixed infection, possibly caused by the Cr  d   method not being performed as it ought to be. The uterus was not grasped centrally over the fundus and compressed centrally upon its anterior and posterior surfaces. It was not done with one hand but with two hands. The accoucheur stood between the limbs of the patient and facing the patient, having his two hand not only over the fundus of the uterus but likewise on to the tubes. On account of this manipulation the fimbriated extremities of the tubes, and possibly the uterine too, were loosened and pus poured into the periton  al cavity.

Another point that I failed to hear discussed this evening was early operation in acute gonorrh  al pyosalpinx. I know of five or six cases where I could directly trace gonorrh  al infection and large tubal abscesses to the husband. I knew of the existence of the disease in the husband. He had been warned of the great probability of infecting his wife, but the infection did occur. I know of one instance out of the five or six cases in which there was a large pus-

tube where the patient was treated symptomatically, and the pus-tube not only disappeared, but the patient became pregnant afterward. I would warn against too early operation in acute cases of pyosalpinx, inasmuch as I believe many of them will become well of their own accord.

Finally, I would like to ask Dr. Henrotin a question. Did I understand him to say that he knows of cases of acute gonorrhœal peritonitis in which the symptoms were *foudroyant*, as he called them? If he did, it is something I personally have never observed. On the contrary, I have in mind several cases where I have been called for the purpose of differentiating between acute pyosalpinx on the right side and appendicitis, and it was not only the history of infection by gonorrhœa but likewise the history of peritonæal symptoms that aided me in making a differential diagnosis. In other words, the symptoms of acute gonorrhœal tubal trouble are much milder than are those, for instance, of appendicial peritonitis. Gonorrhœal peritonitis is always a localized peritonitis, as has been demonstrated by Werthheim.

DR. HENROTIN: I believe I made the statement that whenever we have a *foudroyant* peritonitis or the very acute type of the disease, in my opinion it is always due to the rupture of a pre-existing pyosalpinx and not to an acute peritonitis. In other words, an old pus-tube will give rise to very acute symptoms, with death in perhaps two or three days. It is an acute gonorrhœa traveling up the tubes and infecting the peritonæum at once.

Official Transactions.

C. S. BACON, *Editor of the Society.*

Stated Meeting, June 17th, 1898.

The *President*, DR. HENRY P. NEWMAN, M.D., in the Chair.

Specimens of Early Extra-uterine and Early Intra-uterine Pregnancy.

DR. FRANK A. STAHL: It is not my desire to invite a discussion on extra-uterine pregnancy but by means of these demonstrations to show comparatively the differences, microscopically considered, in the same period of development of extra-uterine pregnancy and intra-uterine pregnancy; later on I hope to utilize them for sectional work.

Specimen I. is a clot within which is a gestation-sac of an extra-uterine pregnancy of about the second to the third week. I think it is one of the earliest specimens on record in which a diagnosis was made before the operation and verified during it. In connection with this specimen I wish to call your attention to a very able paper presented to this Society some months ago by one of our members, in which the statement was made that in cases of extra-uterine pregnancy not so much stress should be laid upon the symptom of early vomiting. In other words, vomiting in the early months of extra-uterine pregnancy is not as characteristic a symptom as it is in intra-

FIG. 1.



Early intra-uterine ovum. Notice well-marked villi. (Original size, length 16 mm., breadth 11 mm., thickness 8 mm.)

uterine pregnancy. However, in my case vomiting was one of the characteristic features. In her case I was led to think of extra-uterine pregnancy almost intuitively, as the patient said to me, "Doctor, I do not know why it is, but in the mornings I feel like vomiting and yet during the day it clears up, and in the evening I have such an appetite that I eat ravenously." When this particular aspect of the case presented itself to me I took the trouble to look over some of my old notes and I can recall one case of some eight years ago which occurred in the hands of a general practitioner. The patient had been treated some five months for catarrh of the stomach, until the true nature of the case, extra-uterine pregnancy, was discovered. I have notes also of two other cases in which vomiting was present. Vomiting was noticed in all four of these cases early

in pregnancy. I thought I would mention this fact and see if other members have noted the same feature in their experience. I have thought that vomiting is present in many cases; it may be that it often is not noticed, due either to the fact that the cases are often referred to consultants or that the vomiting is of so mild a nature in expression that it escapes notice. Physiologically and pathologically considered it would seem that vomiting should be among the symptoms of even early extra-uterine pregnancy.

At the time the clot was taken out it looked as though covered with a shiny membrane, appearing much like a diseased ovary, but in breaking the clot open the gestation-sac was found intact. It was

FIG. 2.



Fig. 1 enlarged.

a perfect specimen, but in examining it the sac was ruptured. Closely regarding the membranes the villi seem not to be present. The history of the case is that four years ago the lady had had a child, but none since then. She passed through a long siege of pelvic trouble, the exact nature of which I do not know, probably some septic trouble with metritis and parametritis. The uterus was retroflected and very sensitive, and firmly bound down, so much so, that at the operation the adhesions were found to be very firm and leathery in consistency. An interesting feature of the case was that during these four years menstruation was at times so painful that it was necessary for her to take to bed and use sedatives. In closing the wound at the operation the uterus was released from its adhesions and was stitched to the anterior abdominal wall. When men-

struation recurred it did so without any of the previous painful expressions. The first she knew of the recurrent menses was that she saw signs of blood. Another interesting feature in this case is that about four months after she left the hospital, wishing to attend church services, she walked some distance. For some reason the uterus became liberated from its attachment to the abdominal wall, as a consequence of which a series of symptoms developed, such as vomiting, increased temperature, a one-day's flow from the uterus, but bright red in color, not pale as is more characteristic of pseudo-menstruation in extra-uterine pregnancy; and at a certain point to

FIG. 3.



ORIGINAL SIZE.

Early intra-uterine ovum. Ampullary form of tubal pregnancy. Clot broken open. Notice seeming absence of villi. (Diameter of ovule in specimen 7 mm.)

the left of the uterus I found a tumefaction which I was led at first to think was possibly another extra-uterine pregnancy. I mention this feature to show how easy it is at times to think of the presence of another such pregnancy where one has previously occurred. This must have been due to the slight hemorrhage and to the exudate from the irritation incidental to the separation of the uterus from its abdominal attachments. This all cleared up with douches and rest; she is now very well, no painful menstruation whatever.

The form of extra-uterine pregnancy in this case, was that in which the ovum developed wholly within the fimbriated extremity of the right tube, the ampullary form of tubal pregnancy. The ovum goes on to a certain development, and then due either to some exertion on the part of the woman it is ruptured, or at times it is

ruptured by the physician in making examination. In either case we have an expression of the part similar to a tubal abortion. There was quite a severe hemorrhage in this case when we opened the abdomen.

Specimen II.—There is nothing of especial interest about this second ovum except as to the fact of its early development. A number of years ago the woman had her only child; menstruation was regular until March last; menstruated again the 15th of April; the next menstruation was delayed until the 26th of May, which would make the intervening period one of about six weeks. During that night she was taken with a severe flowing, which continued until the next morning. She had a desire to go to the closet. As she suspected that she was pregnant she noticed the contents of what she had passed, and observed a little white body which she picked out. I present it to you this evening.

DISCUSSION.

THE PRESIDENT: I would like to ask whether this last specimen came through the uterine canal, or whether it was thrown off as an abortion?

Dr. STAHL: It was a spontaneous throwing off of an intra-uterine ovum.

Dr. HENRY P. NEWMAN: In connection with what the doctor has said in regard to the diagnostic value of the vomiting of extra-uterine pregnancy it is well to bear in mind that in these cases, particularly in the tubal variety, the uterus increases in size up to the sixth or eighth week at a rate corresponding to that of intra-uterine pregnancy. This is a clinical fact which it is well to bear in mind in making the differential diagnosis. Vomiting, with enlargement of the uterus, may indicate pregnancy but without additional clinical evidence is of no value in determining the variety (extra- or intra-uterine). With reference to the frequency of vomiting, I should say I have observed it in 25 or 30 per cent. of my cases of extra-uterine pregnancy. The early discovery of extra-uterine pregnancy is a most important point, and therein lies the safety of early operative interference. As to the statement by the essayist, that this was one of the first cases in which a diagnosis was made previous to rupture, I cannot agree with him. The diagnosis of extra-uterine pregnancy has been given a great deal of attention of late and those who are working clinically in this line have succeeded

in many instances in discovering extra-uterine pregnancy before rupture.

Dr. STAHL: Dr. Newman misunderstood me. I tried to convey the idea that the specimen I presented was one of the earliest ones on record in which a diagnosis was made before operation, namely, before the second or third week.

Dr. NEWMAN: I did misunderstand Dr. Stahl and should say that it is quite unusual to discover a case of extra-uterine pregnancy before the fourth week.

A Clinical and Pathological Study of Five Recent Cases of Hysterectomy for Fibromata.

BY REUBEN PETERSON, M.D.

(See page 411.)

DISCUSSION.

Dr. F. R. ZEIT: Dr. Peterson has already described the pathological anatomy of the specimens, and I believe if we pass them around they will explain themselves. You will find slides of sub-mucous and intramural myomas, pyosalpinx, glandular polypus with retention-cysts and salpingitis under the microscopes, and if we had a larger number of microscopes we would be able to show you the different forms of hyperplasias of the uterine mucosa. Two of the specimens had an interstitial hyperplasia; one had a glandular hyperplasia which is shown. There is a third specimen where the two glandular and the interstitial form are combined, it being a diffuse hyperplasia. There are too many specimens to show the pathology of each case separately, so I have made a choice of the most interesting ones. You will find among others a salpingitis, an endosalpingitis, and you will find a very good specimen of pyosalpinx, in which the small cell infiltration extends through all the three layers.

There are presented in these cases several subjects of special interest. Dr. Peterson has already mentioned that there is a calcified corpus luteum. I have not had an opportunity yet of examining it. The specimen is certainly very interesting, and you will find it in one of the jars here. Then there is the combination of fibroid tumor with pregnancy. As soon as I made the anterior incision, as you see it in the specimen, after Dr. Peterson sent this supposed cystic fibroid to the laboratory from the operating-room, the little hand of

the foetus, which had been nearly amputated, protruded and the amniotic fluid ran out. It would be an interesting specimen for the embryologist as it has been very well preserved. In the same case of fibroid, complicated by pregnancy, Dr. Peterson had, after the operation, infection. Dr. Peterson said it was a mural abscess and had an examination made, at which there were found streptococci. These are demonstrated under the microscope, the same as they came from the pus-cavity. The forms are very long, and you can count as many as forty individual cocci in one of the chains. The question arises, are these long forms of streptococci as virulent as the short forms? Let us see:

This question of streptococcus infection in the tube is an interesting one. I believe in every case of ruptured pyosalpinx an examination ought to be made as soon as the tube ruptures to see if streptococci can be found. The pus itself seldom or never contains any. The best way to find them is by using a platinum loop in scraping the wall of the pyosalpinx. We are most likely to find them there, and if no streptococci are found but instead you find staphylococci, gonococci, pneumococci and other diplococci, then the prognosis should not be very serious. I do not believe that there is very much harm in the rupture of a tube, either during an operation or without an operation, providing you have no *virulent* streptococci present. I also observe in a pus-tube, recently removed by Dr. Carl Beck, very long chains of streptococci (20 to 40 cocci in a chain) but a good recovery took place in that case although the tube burst during the operation. I have been looking upon streptococci infection in cases of pyosalpinx, especially if rupture takes place before or during operation, as fatal in all cases. These two cases certainly seem to prove that the very long forms of streptococci do not seem to be as virulent as the short forms.

I have to add here another interesting fact. In one of the pus-tubes that Dr. Peterson operated on I found a diplococcus which is a gonococcus morphologically.

1. The length of the division line between the diplococcus is longer than its transverse diameter.
2. It is found in great numbers in the perinuclear protoplasm of polynuclear leucocytes.
3. It is decolorized by Gram's staining method.

You see, it has so far all the characteristics of the gonococcus, measurements are also the same, and yet it is *not* a gonococcus.

If one thinks of the many cases in which a diagnosis of gonor-

rhœa is made by a simple cover-glass smear preparation from the suspected pus or discharge on the strength of the above three points it is evident that many mistakes must have occurred.

I do not believe that anybody who has worked for any length of time in the bacteriologic laboratory has failed to constantly come across a diplococcus which cannot be distinguished by the usual three characteristics given above. The first condition, the morphology of the gonococcus, is admittedly not to be taken as a strong point for diagnosis because we see many different diplococci in the discharges from nose, throat, urethra, vagina, etc., and in saliva, sputum, and urine, which are morphologically identical with the gonococcus.

The second point, that gonococci are mostly found in the perinuclear protoplasm, also holds good for some morphologically identical diplococci which are found in polynuclear leucocytes of nearly all sputa and the pus of many cases of abscess and pyosalpinx. The third point, that gonococci are decolorized by Gram, is given a great deal of weight by most bacteriologists, but if we recall that of all the *pathogenic* diplococci only Fraenkel's diplococcus lanceolatus is stained by Gram and that a good many similar diplococci, such as the diplococcus albus, flavus, the gray and rose forms of diplococci and others are also partially discolored, this point for the differential diagnosis also loses its former significance. I have lately studied the many forms of diplococci a good deal and found especially one form answering fully to *all* the three conditions for diagnosis of gonococcus, so constantly present in different affections, that it can truly be named pseudo-gonococcus. The same organism was also found in Dr. Peterson's case, and I show you under this microscope a pure culture obtained by inoculating an agar tube with the pus from the pyosalpinx. The culture shows a good growth already after six hours in the incubator, and that is the *only* distinctive feature because it fulfills the *three* above-named conditions for diagnosis of the gonococcus. The latter would not grow on agar, and even on special culture media, such as Wassermans, it takes three days before any perceptible growth appears.

From this it is clear that a definite diagnosis of gonorrhœal infection should never be made without a culture. I have, of course, a great many more data of different cases where the same organism was found, and will at some future time demonstrate the collected material to prove the necessity of cultures for diagnosis of gonor-

rhœa, but at this time I only wish to draw your attention to these facts which are alike interesting to the bacteriologist as well as to the gynecologist and must be of the highest import in their application to legal medicine.

For comparison with this pseudo-gonococcus I have here under this microscope, next to the former, a specimen of urethral discharge of a case of acute gonorrhœa from a very young boy which demonstrates the striking similarity morphologically. In this case the perinuclear protoplasm of the polynuclear leucocytes are so packed full with gonococci that the cell margin is clearly mapped out by them. Here a diagnosis is easy enough. You do not find in this whole field any gonococci outside of the cell. In an old chronic case, however, with a limited number of gonococci in the cell-protoplasm a diagnosis should not be made without a culture. In some cases a diagnosis could be made in six hours by the growth on agar of the pseudo-diplococcus, after having found it by direct cover-glass smear-preparation. This forms in the culture a luxurious growth; grayish, elevated colonies, with irregular serrated edges. If agar gave no such growth of diplococci after six to twelve hours, it must be presumed that the case is one of gonorrhœa. A colony growing in three days on Wasserman's medium will then determine this question.

In gynecological cases we do not expect to find very many gonococci in the vagina as a general rule, but inoculate our media by either introducing the finger into the vagina and pressing out the urethra and then taking up the discharge with a platinum needle or by going with a platinum loop into the cervix. In the same manner we obtain material for direct examination by cover-glass smears.

Dr. F. HENROTIN: As regards the first part of the paper, I was not present sufficiently early to hear it, and had I been here, I probably would not be competent to discuss the various phases of the pathology expressed. After listening to the remarks of the last speaker (Dr. Zeit), with reference to the difficulty of developing the gonococcus properly and distinguishing between it and other germs or diplococci, I am led to believe that there are many cases of pyosalpinx possibly that are considered of gonorrhœal origin when they may not have been, particularly if experts have such difficulty in determining it.

As regards the practical part of Dr. Peterson's paper, there is certainly plenty of room for discussion. The first item that struck me as being of special importance was with regard to the propriety

of protecting the perinæal cavity. I do not believe a great number of operators who do abdominal surgery attach enough importance to this one point, namely, the necessity of carefully packing and sufficiently walling off and protecting the general cavity. When this has been done I do not think it makes much difference to a large number of healthy women who are reasonably strong when placed on the operating-table whether an operation lasts an hour or three hours. The more I operate, the more I realize the importance of doing all abdominal operations with extreme care as regards details, and the one detail above all others of importance, in my opinion, is the proper protection of the healthy portion of the peritonæal cavity that is not invaded. When I have once placed pads and properly isolated the pelvis, it has always seemed to me that a good strong patient could stand a prolonged operation. It is a very important thing in septic operations like appendicitis of the acute type, where we have a virulent form of trouble. In such cases I think a number of operators are too much in haste to get at the disease and remove it. The proper procedure, it seems to me from experience, is to never mind the disease but endeavor to save the patient's life; first, by properly isolating or excluding healthy portions, and when the cavity is well closed, by packs; the duration of the operation only cuts a small figure, except in exhausted patients.

The preference of Dr. Peterson for a panhysterectomy in preference to the supra-vaginal amputation is a matter upon which there is and has been great difference of opinion, and the various points of difference cannot be brought out clearly in any such discussion as this. We have had the benefit of a number of experienced operators throughout the country regarding the different methods of dealing with these cases, and we know there is a great difference of opinion among them. I think, perhaps, the most successful operator will operate on one case by one method, and another case by another method, according to the indications presented.

As regards drainage in these cases, we all know that men of equally large experience differ. I think we have to consider and respect the opinions of others, and it can be truly said that the question is still open. I think the tendency of us all at the present time is to dispense with drainage as we get more experienced and become more deliberate in our work.

As regards washing out the cavity, I have always put myself on record as against it. I could not justly place myself on record against a procedure that I have not used. I think this is a mistake

that is sometimes made, but I have used it quite extensively, and employed it here and there where the cases seemed particularly to demand it. I do not know, but personally I feel that I never saw an abdomen that I could not clean more thoroughly by the use of mopping and sponging carefully with discrimination and with proper handling than by irrigation. Most operators in their earlier years of practice drain their cases, and all of us, I presume, resorted to drainage more or less in the operations we did at that time. We did not operate so well then as we do now, and drainage may have saved some of our patients. As time goes on and we do more perfect work, we drain less, and we feel justified in not using drainage. We are careful to protect the peritonæum in our operations. Experience teaches us that the peritonæum is capable of absorbing or taking care of a certain amount of material.

I operated on two cases the last week, in one of which I found a large ovarian abscess following pus-tubes of gonorrhœal origin, of five-years' duration. I remembered the very week the disease originated, so that I knew the exact beginning of the trouble. I tried to obtain the consent of the patient to be operated upon when the abdomen was first invaded, but was unsuccessful. At the end of three or four months a pus-tube developed. This abscess grew up under the cæcum on one side. Fully a pint of pus was removed from this abscess. It was one large mass, and yet the pus was contained in two large sacs. Of course, these cases cannot be operated upon without letting out the pus. In this case there were acute symptoms, such as fever, and every appearance of the case being virulent. I had cultures made at once, but as it was only five or six days ago I have not heard the result of those cultures. As far as one can judge, this might be a case which would call for drainage on account of the immense raw surface that was left, and on account of the fact that the field of operation was contaminated by the pus. As is my usual custom in these cases, I made a small opening in the sac and mopped out the pus by pads until I reached the bottom, then cut it down and mopped out everything as well as possible, exercising the greatest care. I was perfectly satisfied that the pelvis was clean, although it took a long time to get it so. The abdominal cavity was walled off by two or three layers of long pads, so as to prevent shock. This woman has not had any untoward symptoms, and, as far as I can learn, she is in a perfect condition.

Another case I had the last week was one of extra-uterine pregnancy. The woman was apparently in excellent condition before

rupture had taken place, when the pelvic cavity was completely filled with clots and the ruptured tube. The fever had lasted about ten days when I saw her, and the patient manifested acute symptoms. In this case there was absolutely no way of cleaning out the abdominal cavity completely because of the blood-clot having been attached to the sides of the pelvis. There was a thick layer lining the pelvis, and yet when I got through mopping the sides carefully and was closing the abdomen, when I looked into the cavity, it was the dirtiest hole you could possibly imagine. I closed without drainage. All of these cases of extra-uterine pregnancy, if properly cleaned and operated upon promptly do well. It seemed certainly ridiculous or absolute folly not to resort to drainage in a case like that, and yet the woman has not had a single untoward symptom. She has never had a temperature above 99.2. She has not had any pain. This case simply shows how far we can go without drainage, providing we have all the liquid contents perfectly mopped out, and have the walls of all cavities scraped off.

Dr. HENRY P. NEWMAN: The paper presented by Dr. Peterson is worthy of a good and free discussion, and I am sorry that more of our members are not present. One point that struck me particularly was that in four cases out of five there were purulent collections in the pelvis, showing the futility of procrastination or of palliative measures for treating fibroids in a certain percentage of cases at least. I would like to ask Dr. Peterson if these cases were previously treated by any other means. The futility of electricity certainly is very strongly brought to our attention here. The mucosa or the lining membrane of the uterus is certainly in a condition where the introduction of a sound or an electrode would be hazardous, possibly the means of setting up the condition complained of in these cases—the tubo-ovarian inflammation. These fibroids often occur in nullipara who have long, tortuous cervical canals, when the introduction of even a small electrode is accomplished with difficulty and some trauma usually results. If infection is once set up, the spontaneous recovery which we might, perhaps, expect in a well-drained uterus does not occur, but on the contrary, the most virulent inflammation may result involving the tubes, etc.

The interesting pathological demonstrations here are something that we must profit by, as well as the paper presented by the doctor. As Dr. Henrotin said, with our advanced knowledge our methods of operating have changed very materially. For instance, it was formerly customary to wrap the intestines in a towel outside the ab-

domen in removing large growths, but we are extremely cautious now not even to expose them. We find that the Trendelenburg position aids us very materially in such management. We can now observe and handle pathological structures, whereas formerly we had to dig down into the pelvis and remove large intramural growths without this postural aid. Washing out and drainage consequently have become less important than formerly. The protection which we get from gauze enables us to be more painstaking and we can prolong an operation with less danger and shock.

I am in accord with what Dr. Henrotin has said with regard to the choice of operation between panhysterectomy and amputation above the cervix. There are cases where it is absolutely indicated to remove the entire organ. We should do it, and nothing else will answer. But we should exercise discrimination. We should not be absolutely wedded to one procedure.

Dr. EMIL RIES: I was very much interested in the paper of Dr. Peterson. I like to see him operate. I have seen the results of Dr. Peterson's operations and they are excellent. After this preface you will not be surprised to learn that I disagree with him on many points. There is, first of all, the removal of fibroid tumors from the uterus without removing the uterus, the enucleation of fibroids, which the doctor says has been overdone. I think it entirely proper in some cases to leave the uterus and wait to see what becomes of it, particularly where a woman is anxious to bear children. We know that a number of cases have been operated on, the fibroids enucleated where the uterus was left with excellent results. In numerous cases fibroids of the uterus have been enucleated by Martin of Berlin. In some pregnancy has taken place, and the women have been delivered normally. The number of fibroids that can be enucleated from the uterus is very great. I have enucleated from the uterus of one woman twenty-six fibroids, two from the left broad ligament, and two from the right broad ligament, and she made an uninterrupted recovery. She is a comparatively young woman and is undoubtedly better off with a uterus than without one. Nevertheless, in cases like those reported to-night, where pyosalpinx is present, especially if it is bilateral, I do not advise conservative operation. Where the pyosalpinx is unilateral I think a conservative operation has its place. The results of conservative operations are good as to mortality. The mortality is low. It is perfectly true that hysterectomy may become necessary after enucleation, and such cases have been reported in Martin's statistics. His statistics comprise about

seventy cases of enucleation of fibroids, in two of which hysterectomy was done afterward because small foci of fibroids that were left afterward became troublesome.

There is another thing which I would like to mention, and that is the vaginal operation for removal of large fibroids, where we have complication with pyosalpinx and danger of infection of the peritonæal cavity. I think the vaginal operation in such cases has decided advantages. Probably it is not possible in every case to diagnose pyosalpinx beforehand, but the rise of temperature and other symptoms may lead to a diagnosis.

I may say with reference to conservative operations through the vagina, that I have done a number of them with good results. The patients have recovered more easily than after laparotomy.

As to the technique of the toilet of the peritonæum, I must disagree with the Doctor. I do not drain. I do not flush, and I believe I have just as good results as those who do drain. If I had made these statements some eight years ago probably a number of gynecologists would have considered them either immature or very bold and would have been very much opposed to them. Now Dr. Clark of Johns Hopkins Hospital recently published a report in which he collected the statistics of over one thousand cases, and he reaches the conclusion that drainage is not only no good but a decided disadvantage. I mention this because so many operators insist upon the value of abdominal drainage. Personally, I can see absolutely no use for it. The same with flushing. Suppose we have circumscribed infection of the peritonæum, if we take a quantity of water and squirt it into every nook and corner of the peritonæum, it does not cleanse or remove the septic material but spreads it. No drainage on earth can remove the last trace of liquid, because the peritonæum not only absorbs but produces liquid, and that is the reason why I do not drain. I never drain. I pack occasionally in a case of hæmorrhage, or where there is a suspicious portion of the gut which I do not trust. I pack in such a case and make a route for the eventual escape of fæcal matter, so that it does not get into the general peritonæal cavity.

The pathological demonstration of these cases is of great value, and it is along this line that we must expect progress of our special art and science, and the work that is being done by Dr. Zeit is of great value. After saying this, you will not be astonished to hear me say that I disagree with him. He believes in making a microscopical examination of the pus because he thinks it would give us some indi-

cations as to the future course of the cases. A few years ago Schauta of Vienna advanced the same proposition and said that in cases where we find micro-organisms in the pus we should drain, in order not to get peritonitis. In cases where he does not find any micro-organisms he advises to close up the abdominal cavity completely. There are two objections to the value of this examination and one is: only a limited number of smear specimens can be examined during the operation, and if you do not find micro-organisms in four or six specimens it does not prove that there are not some in the rest of the pus. Secondly, if you do find micro-organisms under the microscope you cannot tell whether they are virulent or not. You may find streptococci, but they may not be virulent. Schauta followed this method for a number of years and has abandoned it. I see no necessity for reintroducing it. But we have to continue our examinations of these pus-cavities, and I think one very important step has been taken by Kroenig and Menge of Leipzig, who mentioned the great importance of anærobic germs which live under the exclusion of air and which cannot be found unless by special methods of culture. They are found in a number of cases in the vagina and in pus-tubes and otherwise, where with the usual forms of culture we are not able to find any micro-organisms. I think future study is to be directed in this direction, and I hope that we shall in this way find out something which is unknown now.

I wish to thank Dr. Peterson for his interesting paper and Dr. Zeit for the excellent pathological specimens and demonstration.

Dr. PETERSON (closing the discussion): I am delighted at the liberal manner in which my paper has been discussed. I think the principal value of a paper lies in having members disagree with the author and inform him how they arrive at the same results by different methods, and then he can investigate these methods and adopt anything of value in them.

If I could speak as eloquently as Dr. Henrotin I should have said just what he said. From the standpoint of general abdominal drainage, he has stated my position exactly. When I began my abdominal work I drained everything, because I thought that was right. I thought it was the way to save my cases. At that time I drained when there was very little oozing. When there was a little raw surface deep down in the pelvis I would stick in a glass drainage-tube or make use of gauze. By and by I found I could dispense with drainage in many cases that I thought previously would have died without it.

I was never more surprised in my life than when I saw Dr. Baer of Philadelphia close up an abdomen after he had removed a fibroid tumor with pyosalpinx, something like the cases I have described this evening. I expressed my surprise to him for not draining, and within a few weeks I received a chart of the case in which the temperature did not go above 100° F. at any time. Seeing Dr. Baer do this had its effect on me, and I began to drain my cases less and less. In the last year and a half or two years I do not believe that I have exceeded Dr. Henrotin's proportion in the matter of drainage, namely, one in fifty cases. I cannot give statistics, but that is my general impression, that I have not drained through the abdomen more than two or three times in the last two-years' work. I did drain, however, in some other cases, but by a different method than I had used before. If you put a drainage-tube in the abdominal wall you are draining against gravity. In a few hours your tube will be shut off by adhesions and you do not drain much after all. I do not care how careful a gynæcologist may be; I do not care how carefully he may put in a stitch here and there and leave the pelvis in the beautiful condition described by Dr. Henrotin, there will be severe cases of vascular growths where, after removing the tumors, there will be more or less oozing and dead spaces which cannot be avoided.

In such cases I drain through the vagina in order to get rid of the pool of blood that accumulates there after one of these severe operations. In the class of cases I am speaking of, if you do not drain, if you carefully watch your cases, you will get a rise of temperature, perhaps twenty-four or thirty-six hours after the operation, due, I think, to a sudden absorption of germs or toxins. I have come to the conclusion that I prevent this condition by amputating the vagina, removing the cervix and putting in simply a little strand of gauze, and having the material which collects at the bottom of the pelvis flow out through the vagina. That is my reason for drainage in these cases. The students of the Post-Graduate Medical School have not seen me drain through the abdomen since I began my work there the first of January, except in one case, and that was to protect the bowel.

I agree with what Dr. Ries has said relative to the value of immediate bacteriological examinations of the pus that is removed from the abdomen.

If I am not mistaken Schauta has been in the habit of laying too much stress upon the results of the bacteriological findings at the

time of the operation. He has sacrificed apparently healthy appendages on one side together with the uterus because the gonococcus was found in the pus from the pyosalpinx he was removing. I do not think that is good reasoning. I have spoken against such work on more than one occasion. But I do think there are things about the bacteriology of the contents of the abdominal cavity which are yet unknown and a great deal of information can be obtained from bacteriological tests made of our removed specimens. Smears made at the time of the operation will not settle the question of drainage.

I believe we can have streptococci within the abdomen and not have any trouble arise from them. In regard to the case Dr. Zeit speaks of, there was quite a controversy between him and myself in regard to its outcome. He showed me a slide containing a long chain of streptococci and expressed an opinion that in case the pus-tube had broken into the abdomen the patient would die. Speaking from the standpoint of a surgeon, I thought under certain conditions the patient's peritonæum could take care of these germs. So the bacteriologist looks at these things from one point of view and the surgeon from another.

Dr. Newman asks the question whether the cases had been treated previously or not. I do not think they had, and I took the histories very carefully. But I was interested in what a professional friend of mine said when he saw the specimen containing the foetus. It reminded him of a case he had recently in which he passed a uterine electrode for the purpose of reducing the size of the tumor by means of electricity and, while he got the foetus, he did not remove the tumor.

Dr. Ries rather criticized me for not doing a myomectomy in this case. If I had discovered the foetus before I operated I should have refrained from operating, and I was a little surprised when Dr. Zeit told me there was a foetus there. I quite agree with the conservative ideas expressed but there are cases demanding hysterectomy in which myomectomy is clearly contra-indicated. If you will notice the specimens shown this evening you will see that in addition to the larger growths which might have been enucleated, the uterine wall contains many foci which it would have been impossible to reach. Under these conditions it is not justifiable to leave the uterus, except the woman be extremely anxious for children and the situation be plainly stated to her.

One more point and I am through: The choice of operation. I

have carefully studied the different methods of performing hysterectomy and have employed a number, but I am slow to discard any method which I have proved by experience to be a good one. In my first two cases of hysterectomy I tried the extraperitonæal treatment of the stump, and I shall never forget them. I abandoned that method. The next method I employed was supravaginal amputation of the cervix. I treated one or two cases by this method, and they did fairly well. Afterward I tried panhysterectomy, and my cases did so beautifully that I had every reason for continuing this method.

Official Transactions.

C. S. BACON, *Editor of the Society.*

TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

Stated Meeting, October 6, 1898.

The *President*, CHARLES P. NOBLE, M.D., in the Chair.

Sequelæ of Abdominal Operations.

BY WILMER KRUSEN, M.D.

(See page 422.)

DISCUSSION.

Dr. F. F. MONTGOMERY: I have listened with much interest and pleasure to the paper presented by Dr. Krusen. It presents a series of conditions which are certainly a source of much discomfort and distress to those who have an opportunity to practise abdominal surgery. There are none of us but what have an opportunity now and then, possibly sometimes through our own fault, again through no fault of our own, to see patients suffer from the sequelæ named. The Doctor in the early part of his paper, however, has gone out of the way to attack an instrument which he has used but little himself, as being productive of various disorders of women subjected to abdominal operation. I do not mean the wash-tub but the bicycle. In my experience of women who are suffering from neurotic disorders, if I can get them to either the wash-tub or the bicycle I feel more hopeful of their getting better from those lesions, than if they are encouraged to feel that they are invalids. I cannot conceive how either would encourage the formation of adhesions, the existence of fæcal fistulæ or many of the neurotic symptoms which are discussed in the paper. The first sequela discussed is that of sinuses, which are likely to occur as the result of defects in treatment during convalescence. They are more prone to occur in those cases in which the abdominal cavity has been the subject of a septic condition when the operation was performed, and in such cases it seems far preferable that the animal ligature should be used rather than silk or any material which is unabsorbable and likely to be retained. By the animal ligature we avoid a source of irritation which must exist for a

length of time if the silk ligature is used. The tendency to their formation may also be decreased by the use of the thermocautery applied to the adhesions and to the surface of the pelvis which decreases the tendency to adhesions, to blood effusion and the accumulation of the latter in the peritonæal cavity. The thermocautery is one of the most effective aseptic agents we can employ. By its use we decrease the action of septic or irritating material left in the abdominal cavity. As has been mentioned, the frequency of the sinus is increased by the necessity for drainage. The frequency for the employment of the latter can be greatly reduced by instituting what has been described as postural drainage. Having thoroughly irrigated the abdominal cavity with normal salt solution, the patient is raised in the Trendelenburg posture, the cavity filled with fluid which is permitted to remain with the closure of the wound. The patient kept in this position the serum does not accumulate in that portion of the pelvis in which the peritonæum has been most injured by operation but rather the material is thrown back upon the healthier peritonæum where it is more readily absorbed. The position also decreases the formation of adhesions of which he speaks, so that patients kept in this position for thirty-six hours are unlikely to have as firm adhesions as if the intestines were permitted to come in contact with the surfaces at first. But sinuses do not always immediately follow the operation. They are favored by the necessity for drainage, by the introduction of the gauze drain, and particularly where care is not practised to invert the edges of the gauze, small particles of this fiber are left. These fibers thus left in the abdominal cavity become infected and will keep up a sinus just as readily as would an infected ligature. Sinuses may develop from the irritation of a ligature or suture a long period after its introduction. This is more particularly true when large heavy silk is used, especially heavy braided silk. I have seen an abscess and sinus form as a result of such a ligature four years after its introduction. I have also seen sinuses in the abdominal cavity caused by the introduction of buried silk sutures, silver wire or the silk suture used for the attachment of the uterus in ventrofixation. I saw a case to-day in which a sinus of this kind occurred nearly a year after the operation had been performed. She had gone the greater part of this time without any trouble, the uterus in a fair condition, fixation was right, and yet a year later the patient developed an abscess, and a sinus exists which will more likely continue until the ligature or suture which caused it is removed.

A few days ago in Pittsburg I saw a gentleman do a ventrofixation in which he used silk, the heaviest I have ever seen for suturing the uterus to the peritonæum. I looked at it in perfect astonishment for I have had trouble with very fine silk. I asked him if he did not hear from these ligatures subsequently. He said no, he had never heard from them. I could hardly conceive how those large pieces of silk could remain in the abdominal wall without giving rise later to more or less irritation. Ventral hernia is without question one of the most unpleasant sequelæ with which we have to deal. It may occur in any case in which septic infection has developed, is particularly likely to occur in those individuals in whom the muscular portions of the abdominal wall have been extremely thinned from the pressure of a large tumor, or where the patient has given birth to children and diastasis of the recti muscles has occurred. In such cases not infrequently after the union has taken place, as the patient increases in flesh, this thin wall will give way and a large ventral hernia will result. As has been asserted, a fæcal fistula is an exceedingly unpleasant sequel. As has been mentioned, it may result from a weakened condition of the wall of the bowel, more particularly in the sigmoid flexure, especially where this has been weakened by developing inflammation, becoming softened and weakened thereby. In such cases the suture may tear out almost as rapidly as it is introduced, so that the bowel is weakened by the attempt to restore it, and even where apparently closed the subsequent distention with gas will establish an opening. A fistula is likely to occur in a weakened bowel in any case in which the bowel becomes twisted or adhesions form by which the caliber below the weakened portion is decreased or obstructed.

I was so unfortunate as to lose a patient two years ago, in which a difficult hysterectomy had been done. She had suffered from fibroid tumors. In a previous operation the abdomen was opened for their removal and closed, with the assertion that the case was an inoperable one. When she came under my observation she was suffering greatly from symptoms, the result of the impacted mass in the pelvis. The process of removal consisted in opening through the capsule of the uterus and removing piece by piece these masses, which consisted of a number of multiple interstitial myomata which were so tightly packed in the pelvis as to give rise to changes in shape. Each growth was molded by the others. They were removed and the uterus thus decreased to such an extent that liga-

tures could be placed in its broad ligament and the mass removed. The patient did well for ten days when through the drainage opening fæcal material was recognized. The late occurrence of this fæcal fistula made me fear that there was some obstruction below the point at which it had formed. The patient was permitted, however, to go a few days, with the hope that the fistula might be only a temporary condition, but finding that the amount of material passed through the fistula increased, the abdomen was opened and revealed that the bowel had formed a volvulus, which had caused a rupture of the weakened bowel above. This patient succumbed to the second operation.

Where a fæcal fistula exists without contraction of the bowel below the point of its occurrence, with cleanliness the opening will contract and under the process of granulation result in closure and relief of the patient without the necessity of an operation. While there is evidently contraction of the bowel or where the fistula has occurred late in the case, the earlier the operation is done the better for the patient. I have seen one case in which the fistula occurred in a patient where the operation was done for a tubercular condition of the ovary and general tuberculosis of the peritonæum was found. Gauze drainage was used. The patient recovered, with the exception that the sinus remained. Some months later in this canal a fæcal fistula opened, which gradually increased until a great portion of the fæcal contents passed through the sinus. This necessitated a second operation and, as the fistula was situated near the sigmoid flexure, the union did not occur and the patient, after some months of discomfort, died.

Neurotic conditions following operation are exceedingly trying. Oftentimes they are a continuation of symptoms which preceded the operation, and certainly in those cases in which the patient has marked neurotic manifestations, with very little pelvic disease, very little enlargement, for instance, of the ovaries, so far as can be determined by palpation, the neurotic symptoms are likely to continue subsequent to the operation. We see these cases much less frequently now than formerly, when it was the habit to operate for pain with the removal of ovaries and tubes, where patients complained without our being able to determine any pathological cause for such pain by physical examination. Where pathological conditions are present they have been so long subject to continued discomfort and distress that neurasthenia arises and the nutrition is necessarily affected. In such cases we will often find an operation will

result favorably, but occasionally the symptoms will be just as severe subsequent to the procedure as before. These are cases which, if we can get them to the wash-tub or bicycle, the cure will be completed. Anything that will get the patient out of herself, which will increase, as the bicycle exercise does, the oxygenation of her blood, will occupy her attention, will, if judiciously managed, result in benefit instead of harm.

Dr. RICHARD C. NORRIS: Sinuses that persist as the result of ligatures in the pelvis will occasionally harrass the operator who uses silk in pus cases. If one or two systematic efforts are made at extraction of ligature and it fails to come away, it is best to allow Nature a long time to throw off the ligature since secondary operations for that purpose are often dangerous. I have in mind a case of this character. A patient to whom I had given such advice was impatient and her unwillingness to wait induced her to place herself in the hands of another surgeon. An operation was done for removal of this ligature that cost the patient her life. Broadly speaking, and as a practical working rule in the treatment of these cases, I think we should give Nature a fair chance, after one or two efforts have been made at removal of the ligature from the depths of the sinus. Again, practically considering the treatment of ventral hernia following coeliotomy it has been my experience in the few cases that I have attempted to repair that they were very difficult operations. The condition usually is not a simple diastasis of the recti muscles. There are usually dense adhesions with wide areas of the bowel attached and enucleation and separation of these surfaces will often cause quite extensive injuries to the bowel that complicate the operation and jeopardize the patient's convalescence. However, where the hernia is extensive and gives rise to serious trouble, Dr. Krusen's advice that an early operation should be undertaken I believe sound. I have had one case in my experience in which cancer in the cervix developed after hysterectomy for a uterine fibroid. I have now under my care an unfortunate woman from whom a fibroid was removed two years ago with no macroscopical evidence of malignancy. Two years afterward extensive cancer had developed in cervix left after the hysterectomy. She is now in the last stages of her cancerous disease, bedridden, waiting patiently for her death to come. This is an important question and I think men who have a much larger experience than myself should report all such cases, in order that there may be made a collective investigation to determine the frequency of malignant disease fol-

lowing operation on a benign growth, which fact may show one advantage of complete or panhysterectomy over the supravaginal amputation. I have had six cases of fæcal fistula in my experience following operations; four of these healed while the patient was under my care in the wards; two others are yet in existence and are a source of great annoyance to me. Here, again, the question as to the advisability of operation is a most serious one. I have learned from the experience of a number of surgeons that secondary operations for the cure of fæcal fistula are attended by a very high mortality. Dr. Montgomery has referred to two that died. It seems to me here, again, that we must give Nature a fair chance. Spontaneous closures after two and even three years have been recorded and it has always been my advice to such patients to wait patiently and to give them as much encouragement as possible, hoping ultimately that the fistula will close. It is impossible to say how long one must wait for the closure in these cases. Sometimes more than one opening in the bowel occurs, each opening furnishing a channel to the abdominal incision, with widespread adhesions. The danger of separating these and the necessity for accurate stitching and often for resection, simply emphasize the danger of this operation. Dr. Krusen has referred to the neurasthenic symptoms that appear after operation, and Dr. Montgomery has mentioned the fact, which I have repeatedly observed, that many of these patients are neurasthenic prior to the operation, the neurasthenia being less dependent upon the pelvic lesion than the surgeon thought. In some cases the pain and pelvic symptoms unquestionably follow our efforts at conservation of the appendages, a modern but doubtful aspect of abdominal surgery. This whole question of conservation, after an operation is once begun is, unfortunately, not yet governed by fixed rules or even by well-established principles. In some women when we expect a healthy growth to continue in the portion of an ovary left, we oftentimes are sadly disappointed, and we have been compelled to do a secondary operation for cystic degeneration in the portion of the ovary we attempted to save. In other cases where you would think it folly to leave behind a portion of an ovary, the patient menstruated regularly and perhaps became pregnant. We cannot tell even after operation how much to promise the patient, each case being more or less of an experiment which, however, should be attempted in young women even if our efforts sometimes fail. The failures of conservative surgery account for some of these cases of pelvic pain and distress that follow coeliotomy.

The question of neurasthenic symptoms in pelvic disease is, of course, too great a subject to take up in this discussion. I believe that some neurasthenics are cured by gynæcological operations, but only where the neurasthenia, as we learn after the operation, has been in some way aggravated by or even dependent upon the pelvic lesions. Very often the neurasthenia is independent of the pelvic lesion, and if we could readily differentiate these cases the gynæcologist would be antagonized less frequently by the neurologist.

Dr. Krusen has done well to call our attention to these subjects. We all and individually have such experiences, which certainly stimulate us to apply our best thought and mature judgment in order to reduce to a minimum these unfortunate sequelæ and complications.

DR. MONTGOMERY: With reference to the observation made by Dr. Norris regarding malignant growths in the cervix following operation for benign tumors, I wish to refer to a case of development of the epithelioma after supravaginal amputation for fibroid. The patient had a slight laceration, and a year and a half after removal of the fundus of the uterus for the fibroids she began to develop a discharge which was found to be associated with a glandular proliferation in the cervix. This was so persistent that a section of the tissue was removed and pronounced to be beginning epithelioma. Fortunately the disease had not gone so far but that by amputating the cervix, making a funnel-shaped dissection, the mucous membrane was removed and this rendered certain by the application of the thermocautery at the superior angle. The wound was closed with sutures and the patient completely recovered.

DR. C. P. NOBLE: This paper by Dr. Krusen is one which is very practical and therefore all of us who see considerable work must necessarily be interested in it. I am glad to say that I think that most of the sequelæ which were touched on have been largely eliminated and can be almost entirely eliminated from our practical work if we will make use of rigid technique. So far as stitch abscesses in the abdominal wall is concerned, I do not think I have seen one for at least three years. Stitch abscesses in the abdominal wall means that the operation is done in a hospital where a great deal of pus is about or else that sutures are very tightly tied. It would be a matter of personal skill on the part of the operator to escape stitch abscesses if this were not the case. I think stitch abscesses are largely due to dirty sutures; when they are not due to this it is due to the fact that

the abdominal wound is not properly cleaned when wound is sewed. Sinuses also, I think, have been practically eliminated by those who use the later technique. The last sinus in my own work dates back nearly four years, in which hysterectomy was done for suppurating ovarian tumors and silk ligatures were used. Since discarding silk ligatures and discarding drainage the sinuses have ceased to exist. When I used silk occasionally a sinus would form, not very frequently as I did not use cable-twist silk. Every once in a while I am called upon to deal with an intraperitonæal abscess or a sinus from the hands of some one who uses this silk. Only the other day I operated on a patient who had cable-twist silk used two and a half years ago. There was enough silk in that patient to have ligated all possible vessels in twelve operations. I am sorry to say that in the effort to cure her of her intraperitonæal abscesses she died. As to how to deal with these sinuses when they come under our care, I am entirely in accord with Dr. Norris. All the sinuses I ever had in my practice healed spontaneously. I never operated on one of them and there were probably twelve. I was tempted to operate once upon another man's sinus and the patient came near dying. These cases are difficult, it is hard to find the silk, there is a long, tedious operation, and the patient is apt to have peritonitis from infection. If a patient with sinus consulted me I would be slow to advise her to be operated on. I find we will almost invariably get the ligature if we will patiently "fish" for it several times with a proper hook. It is a mistake to fish too frequently; it should be at several weeks' interval. I have used a little hook I had made for this purpose and I have always succeeded in getting the ligature and the sinus closed up spontaneously. By using modern technique and catgut I think sinuses can be eliminated. So far as hernia is concerned it is almost purely a matter of how the abdominal wall is sewed up. For some six years I have used buried sutures and in that time there have been reported to me two hernias. Of the many post-operative hernias which I have operated upon (and there have never been any from buried sutures), all have been from men who use through-and-through sutures. If we would all adopt the tier suture and do it well, certainly hernias would represent but a fraction of one per cent. of the cases. The treatment of post-operative hernias is to operate on them, and operate promptly, and by following the method indicated by the author of the paper, with the exception of the method of suturing, the results are most admirable. These cases have invariably recovered. I have never seen one die and I have

never seen one in which the hernia recurred. Post-operative adhesions are much less common now than formerly, when the intestines were not protected during operation with gauze and when drainage was used. There is no doubt we will get a few post-operative adhesions, but they give very little trouble in work at this time. As to the stump of the cervix after hysterectomy and abscesses about it, some years ago when silk was used for ligatures I had several cases in which silk ligatures became infected. Since abandoning silk I have never seen an abscess about the stump of the cervix.

As to the question of cancer in the stump left back, I do not know that I have had any case. There was one case that had supravaginal hysterectomy that died afterward of cancer of the pelvis, but whether it started in the stump I do not know; the specimen was not examined microscopically.

As to fæcal fistula, I find here I am in very close accordance with Dr. Norris. How many fæcal fistulæ I have seen I cannot recall. There have been a considerable number and with the exception of two they have all closed spontaneously without operation. One of these cases I operated on. It was a spontaneous fistula in a tubercular case. The bowel was so friable that stitches would not hold. That patient now has two fistulæ instead of one, as before operation. The other case of fæcal fistula was in a tubercular patient. After operation the pelvis suppurated and some months later she developed a fæcal fistula. As that was tubercular, I did not advise operation as I thought the chances for cure were poor. About two dozen spontaneous cures have come under my notice. I think the best way to treat a fæcal fistula is to leave it alone. I find myself in entire accord with Dr. Montgomery about the bicycle. Formerly I saw many of this class of nervous patients, but after putting them on a bicycle they have ceased to come to the office. I am satisfied that the class of women referred to will reach a higher health-level if you can get them on a bicycle or to the wash-tub, or to take some exercise that will take their attention off from themselves. As to women injuring themselves by riding the bicycle, I have never had such a patient. I had one patient who thought she had dislocated both kidneys by scorching up a hill. Her kidneys were loose, but that it was due to the bicycle I cannot state.

Dr. GEORGE ERETY SHOEMAKER: I want to mention one case as bearing out the wisdom of the let-alone treatment of fæcal fistula. Some five years ago I assisted in an abdominal section on a case of suppurative tubal disease. A fæcal fistula formed. The woman, who

was very fat, afterward came to a gynæcological dispensary of which I had charge. I advised leaving the fistula alone. In about two years it closed. Recently she died from independent causes at one of the hospitals, and, being present at the autopsy by invitation, I was greatly interested in examining the site of the former fæcal fistula. All traces of it had disappeared and the intestines were free from adhesions to the anterior abdominal wall. A few knuckles of small intestine were adherent at the right uterine cornu. There was nothing that would have suggested the former existence of an abdominal fistula. It shows how Nature will not only heal fistulæ, but remove their traces. My experience with patients who ride the bicycle is very much like that of Dr. Montgomery. I have never seen it do any harm, but much good, particularly in cases with minor lesions, who were neurasthenic.

Dr. JOHN C. DaCOSTA: It seems to me that Dr. Krusen's ideas and Dr. Montgomery's are in perfect harmony. Dr. Krusen's meaning in reference to bicycle and wash-tub, as I take it, is that the energetic women are using both before they are able for it. Dr. Montgomery is also correct in his statement that the lazy ones who wont take exercise should be encouraged to the use of one or other.

Dr. WILMER KRUSEN: Dr. Da Costa has very kindly settled the bicycle question and stated my position precisely. I think there are some cases that undergo active exercise too soon after operation. There are, also, some cases of women who have not undergone operation, who are distinctly harmed by bicycle, although in neurotic women the mental diversion and everything connected with riding is a distinct advantage. There are one or two points in regard to cancer of stump after hysterectomy that occur to me. I feel that this is an interesting subject and I hope that any gentleman of this Society will preserve statistics of cases where cancer develops in the stump.

In regard to conservative surgery, I believe in trying conservative surgery first, even if we have to subject the patient to secondary operation afterward. The large number of patients going from office to office prove that there are difficulties. We do not know to what office or dispensary our patients will go, we do not know who is keeping statistics of the cases we have operated on. It is not a pleasant matter for us to confess our mistakes and errors, yet I believe in a Society of this kind it should be done. Every case I have record of, and the cases upon which this paper has been based, have been operated on by a member of the Obstetrical Society and the

Jefferson Dispensary has many herniæ coming to it from operators that have no knowledge of this and are in no way to blame.

In regard to stitch abscesses. I think our President has had a very unusual experience. If we remove the infected pyosalpinx through the abdominal incision there is a possibility of infection occurring, no matter how careful we may be in our technic. Infection in these cases is not due to any fault of technique on the part of the surgeon. I appreciate the kind consideration the gentlemen of the Society have given my paper and the very valuable discussion presented and thank them for the same.

Report of a Case of Cystic Chorion.

Dr. GEORGE ERETY SHOEMAKER: The patient was 20 years old, nulliparous, and had a negative history prior to the cessation of menstruation exactly three and a half months before coming under observation. She was under the care of Dr. J. R. Bryan, who asked me to see her on account of a very severe hæmorrhage which had occurred repeatedly within the two days just previous. The bleeding was accompanied by uterine expulsive pains and the escape of several handfuls, from time to time, of the cystic material here shown.

I found the patient, who had been ruddy and strong two days before, with white lips and eyeballs, pulse weak, a leaky skin, and much prostration from the hæmorrhage, which had been very great and even alarming. Examination showed the uterus rather soft and still reaching the umbilicus, though much material had escaped. The enlargement was symmetrical, and Douglas' pouch was distended by the uterus behind. With the fingers several cubic inches of cystic tissue were withdrawn from the softened cervix without exciting any bleeding, which had ceased for several hours. A vaginal tampon of gauze had been already used. No foetus or normal placenta had been passed.

The question of treatment presented involved the immediate evacuation of the uterine contents under anæsthesia, with the certainty of free bleeding, the probability of inertia of the uterine wall, especially if, as was not unlikely, the growth had invaded the wall itself. The use of instruments in the uterus in case the wall were degenerated, would be not without danger, and therefore to be avoided unless demanded. The other alternative was a tight tampon in the vagina and a continual use of ergot. The latter plan was

adopted, since interference was not immediately demanded by bleeding and there was no sepsis.

The decision proved to be wise, as no further bleeding occurred. More cystic material and a small sac one and a half inches long, which probably had contained a foetus, were passed within the two days following. The uterus slowly underwent involution, and the patient recovered her strength without becoming infected. No foetus could be found.

Had there been any return of hæmorrhage or any indication whatever of infection, the uterus would have been immediately emptied and packed with gauze. Some men would have done this at once.

The condition of cystic chorion or hydatiform degeneration is not a true hydatid growth, but a myxomatous degeneration of the villi, which forms the grape-like cysts numbering many hundreds and held together by delicate friable bands of connective tissue. Though comparatively rare, it has been recognized for centuries.

A curious belief at one time existed that each cyst represented a fertilized ovum. It is even related that a zealous mediæval bishop, with an eye to the letter of the law, felt constrained to administer the rite of baptism to each cyst in a case which came under his observation.

Prior to the escape of some of the cysts from the cervix the condition cannot be recognized with absolute certainty; though the extraordinary size of the uterus, as compared with the duration of gestation would cause it to be suspected. The hæmorrhage is usually severe. The treatment has been outlined above.

The Co-existence of Fibromyoma and Carcinoma in the Uterus, with a Report of Three Cases.

By W. W. BABCOCK, JR., M.D. (Read by invitation.)

(See page 401.)

DISCUSSION.

Dr. E. E. MONTGOMERY: I now recall two cases of association of fibroma with cancer of the body of the organ. Both these patients had been subjected to electrical treatment for some time prior to the development of the latter trouble. I can readily understand that any

condition which produces irritation may further development of malignant degeneration, and in this respect possibly a fibroid growth may be an agent. In the cases that have been mentioned the disease has occurred rather late in life, near or after the climacteric, and in patients in whom the growths were small, so that it would seem probable that in these patients the coincidence of these two conditions was more apparent than real. The inference drawn from the assertion that fibroids occur to the extent of 17 per cent. in some 500 hundred cases operated upon by one man, is susceptible of error, as it is well known that fibroids are more likely to occur after thirty years of age than prior to that period. This paper opens up a very interesting field, but I am unable from the histories given at the time the disease occurs, with the evidences that the growth were quiescent and not at that time producing irritation, to feel that the conclusion is justified that the malignant disease is a consequence of the presence of a fibroma.

DR. GEORGE ERETY SHOEMAKER: I would draw attention to a probable fallacy in the statistics as to the frequency of fibroma. Any large number of cases reported as operated on would necessarily extend back some years so as to include a period when fibromas were rarely operated on. A comparison of the relative number of fibromas to tumors found would be much more valuable than the proportion of fibromas found in a number of general operations.

DR. C. P. NOBLE: My entire experience with cancer of the uterus, with fibromas, includes not only these cases but three others; the other three cases were each cancer of the cervix. Whether it was adenocarcinoma or epithelioma I cannot say, for none of the specimens were examined. These cases complicated fibromas in which a hysterectomy was done. In the other three cases, two of them were not operated on at all; in the third one the diagnosis of cancer of cervix and fibroma was made and when the abdomen was opened for the purpose of performing hysterectomy the broad ligament was so infiltrated that operation was abandoned. Presumably I have seen seven cases of cancer of the uterus complicating fibroids in the entire number of fibroids that have ever come under my observation. One or two points seem to me of importance. It is suggestive that there is an undue proportion of cancer of the body of the uterus complicating fibroids. One very practical point is that these seven cases almost represent the entire number of deaths that have followed operations on fibroids in my experience. It seems to be a very excellent argument in favor of early operation for fibroids. That is to say, all

these seven women would have died without operation, whereas if early operation had been done the supposition is that none of them would have died. That is, I think, a practical point to be dwelt upon.

Dr. L. J. HAMMOND: I can report one case of malignant disease of the body of the uterus in which fibroid was present. In addition I would like to state regarding the causation that there seems to be some discrepancy between the discussion on the paper of Dr. Krusen and the present paper. In one where the fibroid has been removed and the malignant disease develops in the cervix it seems to me certain that causes other than those producing fibroid must have been responsible. The fibroid being removed the blood-supply, which is necessary for new tissue-cell formation, closed off, there would seem to be no possible relation between the former fibroid and the cervical malignancy, and while they certainly do frequently occur together, it seems to me, as Dr. Montgomery said, a coincident.

Dr. W. W. BABCOCK, JR.: In reference to Dr. Montgomery's statement that carcinoma of the body of the uterus occurs at a period of life when fibroids are quiescent and, therefore, not producing irritation, I would say that the belief that the latter may produce endometrical irritation is taken largely from a pathological standpoint. It has been shown that uterine fibromas, not directly submucous, produce a hyperplastic glandular endometritis and there is reason to think that in such uteri the normal post-climacteric endometrial atrophy is hindered or prevented to a greater or less extent. This would seem to be a factor favoring an atypical glandular proliferation.

As regards statistics, it is to be admitted that it is difficult to determine the exact frequency of fibromas in all uteri; yet the statistics of the frequency of fibromas, as shown by consecutive abdominal sections, should not underestimate, if taken from an operator who favors their radical treatment. The contrast of this frequency with the frequency of fibroma in adenocarcinomatous uteri is rather suggestive.

It is interesting to notice that some of the older operators when they mention the association of the two tumors refer it to the presence of the fibroid. They consider the fibroid to have produced cancer, while the latest views try rather to disprove this and consider it entirely as a coincidence.

*Closure of Vesico-vaginal Fistulæ following Vaginal Hysterectomy
and Other Operative Procedures by the Vaginal Route.*

BY CHARLES P. NOBLE, M.D.

(See page 395).

Official Transactions.

FRANK W. TALLEY, M.D., *Secretary.*

ABSTRACTS.*

This Department is in Charge of the Following Staff of Sub-Editors:

DR. T. W. CLEVELAND, DR. G. H. MALLETT, DR. A. D. CHAFFEE.

GYNÆCOLOGY.

UNITED STATES.

Remarks on the Treatment of Tuberculosis of the Uterus and Fallopian Tubes.

W. W. RUSSELL (*Annals of Surgery*, October, 1898) presents some aspects of tuberculosis of the tubes and uterus from the operator's standpoint in the light of what has been found in the laboratory and the operating-room. Since the publication of J. W. William's monograph, "Tuberculosis of the Female Genitalia," in which he claims that eight per cent. of all Fallopian tubes removed for inflammatory disease are tuberculous in origin, great importance has been attached to this subject.

For practical purposes the operator can divide tubercular salpingitis into two forms, according to the position of the disease.

1. The form in which the disease is found on the peritonæal covering of the tube in association with primary tuberculosis of the peritonæum.
2. Where the disease originates in the tube and the peritonæum is exempt or but slightly affected.

It has not been the custom to remove the tubes or uterus in the first form.

In twelve cases of the second form studied in the laboratory there existed coincident tuberculosis of the endometrium and tubes, with the exception of two, and in those two a chronic salpingitis was present.

In three instances the author diagnosed tuberculosis of the endometrium from curettings, and upon removing the uterus and tubes found that the tubes were likewise tuberculous. Also, in two cases of tubercular endosalpingitis found during operation, curettings from the uterus revealed a tuberculosis there.

One is therefore justified in assuming in cases of tubercular endosalpingitis that the uterus is also tuberculous. If curettings from the uterus show a tubercular endometritis it would strongly indicate an involvement of the tubes.

Under strict surgical principles the disease should be looked up as a malignant growth demanding removal of all the affected tissue.

Before undertaking the radical operation one should consider the patient's general condition and exclude tubercular deposits in other parts of the body. If

*All Abstracts are made *directly* from original articles in the language in which they were first published.—Error.

By referring to the illustration it will be seen how easily the instrument can be taken apart. Unscrew the thumb-screw upon handle (A); remove the handle by slipping it off. Unscrew thumb-screw (B) and slip it off. Unscrew the acorn tip (C) when springs will fall out; then remove shaft from injection tube. Put together in exactly the reverse order. The instrument is thoroughly aseptic. I am designing a uterine dilator upon the same principle as the irrigator.

The irrigator is manufactured by George Tiemann & Co., 107 Park Row, New York, to whom I cheerfully acknowledge my thanks for their many courtesies in producing it.

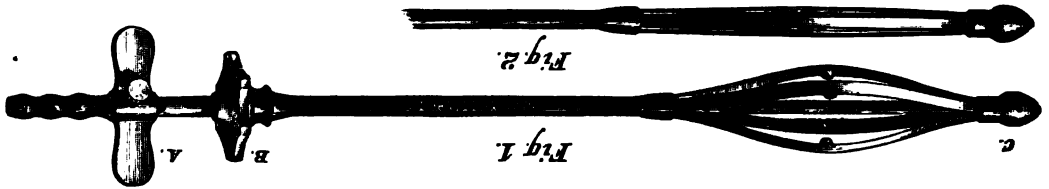
NEW INSTRUMENT.
A NEW UTERINE IRRIGATOR.

BY CHARLES BYRON NICHOLS, M. D., DENVER, COLORADO,

Professor of Clinical Midwifery, Gross Medical College.

Much difficulty has been experienced in the use of various forms of uterine irrigators by the cervix contracting around the instrument or the fenestra becoming clogged with clots of debris stopping the return flow. I have devised the instrument shown in the accompanying illustration hoping to obviate some of the troubles.

Manner of using the instrument.—Having previously dilated the cervix to the desired size, the irrigator is introduced into the cervical canal, carrying the irrigating bulb up through the internal os and bringing the center of the springs to a point representing the longitudinal center of the cervical canal; then expand the springs by turn-



ing the thumb-screw (B). Having expanded the irrigator to the size corresponding to the previous dilatation, allow the fluid to flow into the uterine cavity. When the cavity becomes filled the fluid will re-turn between the springs, making its exit through the vagina. When the irrigation is finished, contract the springs by turning the thumb-screw (B) back and remove the irrigator. In dilating the instrument care must be taken that it is performed in the following manner: Grasp the handle A with the thumb and forefinger of the right hand; grasp the thumb-screw (B) with the thumb and forefinger of the left hand and turn from left to right until the desired amount of dilatation has been accomplished.

In some forms of post-partum trouble the springs have sufficient strength to act as a dilator. They are also strong enough to press out of the way redundant cervical mucous membrane in some of the patulous cervical canals which one meets.

A Brownie Baby.

WHYTE GLANDOWER OWEN (*Med. News*, September 10, 1898) says that while monstrosities are usually mere curiosities, yet when they bear upon the much-discussed question of maternal impressions they may become of scientific interest. The case cited seems to point to such a history. The writer was called to a woman who had been in severe labor for about four hours. The cervix was well dilated but occupied by the bag of waters alone. The abdomen was enormously distended but no foetus could be felt. This condition continued for two hours, when the attendant ruptured the membranes, and a tremendous gush of water followed. Examination showed the os to be occupied by a smooth, soft, cartilaginous body. Thinking this to be a tumor, the patient was placed under chloroform for a more careful examination, when it was found that the tumor was connected with the head of the foetus. A dose of ergot and friction applied to the fundus soon resulted in the delivery of a still-born child, an exact representation of one of Palmer Cox's "Brownies," the grotesque features, frog-like abdomen, and spindling legs. But the great peculiarity was its cap, a hood of fibrous tissue, of purplish hue, which originated in a space of probably $2\frac{1}{2}$ inches on the top of the cranium and extended upward and outward about the same distance. During the early period of the woman's pregnancy her little boy brought home a wooden "Brownie" about fifteen inches long, with its cap painted red. It gave her quite a shock at the time but afterward it amused her considerably.

done to control it if possible. Drugs and dietetic measures seem unavailing in many cases, while change of scene will sometimes effect a cure. Three cases where suggestion was tried to illustrate its value. *Case I.*—Mrs. K., seen in the second month of her fourth pregnancy, suffering from incessant vomiting. During her former pregnancies she had suffered in a similar way during the entire period. She was hypnotized and after the first séance the vomiting ceased entirely. Afterward, the suggestion was made that she take certain articles of food, such as meat, etc., which she disliked. The entire subsequent course of her pregnancy was free from all digestive disturbances. *Case II.*—Mrs. B., who had vomited some during the early months of pregnancy, took cold about the seventh month, and the vomiting became uncontrollable. The rejected food was mixed with blood, and the patient was terribly emaciated. Dilatation of the os was suggested, but at the husband's request the writer was called and requested to try hypnotic suggestion. The patient only went into a superficial sleep, and on waking took and retained a small amount of food. The suggestive treatment was repeated for three days. All vomiting ceased. But as her Roman Catholic friends and the priest assured her that such treatment was opposed to the doctrines of the church, the treatment was discontinued. Five days later the writer was again called. The priest had seen her deplorable condition, continuous vomiting and blood oozing from nose and mouth, and had obtained a dispensation for her, so that treatment was again renewed with success. Two days later labor set in and she was delivered of a child in a few hours. During the puerperium it became evident that her cold was the beginning of acute tuberculosis, from which she died four weeks later. Dr. A. Jacoby expressed the opinion that the vomiting was due to tuberculosis, but it was, nevertheless, controlled by suggestion. *Case III.*—Mrs. W. had already been relieved of a long-standing illness by hypnotic suggestion when she became pregnant. About the fifth month she began to reject all food. A single suggestion in deep hypnosis cured her entirely.

Whether suggestion would avail in labor cases requiring version or forceps the writer has no chance of testing. In normal cases he has tried it with forty-six cases only. Nine patients could not be hypnotized; eleven slept superficially, with post-hypnotic effect; fifteen slept deep, with intrahypnotic and post-hypnotic effect; ten had deep sleep, with perfect amnesia on awakening, and one was awake but felt no pain. Those belonging to the first two classes were mostly of a nervous temperament, or much biased against hypnotism.

Several cases are then cited to show the success of the hypnotic treatment on these different classes of patients. Several doctors were present to witness the labors under the suggestive treatment.

After-pains are easily controlled by suggestion, while lactation can be easily governed by hypnotic treatment. The peristaltic action of the intestines can be regulated, and sleep obtained by means of suggestion. Van Reuterghem, Grossman, and Vogt mention numerous cases of puerperal paralysis cured by suggestion. Melancholia and mania have been successfully treated by this means, Ladame and Dumontpallier reporting several rapid cures by this method.

Chloroform has been largely depended upon to lessen the pangs of labor, but hypnotic suggestion offers a pleasanter and less dangerous means of attaining the same end.

The noticeable features of the case are:

1. A probable complete separation of the placenta at the first attack, without labor pains or serious hæmorrhage.
2. The cessation of the hæmorrhage without a discharge of any kind remaining, and the retention of the blood-clots, with expulsion or absorption of the serum, until they resembled leather.
3. The good health of the patient.

A considerable number of cases of retention of the ovum have been recorded, but the retention of blood-clots as well has not been recorded in the limited amount of recent literature to which the writer had access.

Constitutional Causes of Abortion.

LUCY J. UTTER (*The Physician and Surgeon*, September, 1898) says that all conditions which lead to depression of a woman's health and strength, such as anaemia from any cause, and especially the impaired nutrition resulting from syphilis, have a tendency to weaken the vitality which should be the right of the embryo.

Fevers of the zymotic variety, especially, exert an unfavorable influence on the retention of the ovum. Acute inflammation of any of the internal organs, such as pneumonia, is often complicated by abortion. Shock may produce abortion, but it should be borne in mind that there may have existed a morbid condition of some part of the uterus or its contents predisposing to abortion. The predisposition is often inherited, giving a woman a nervous temperament, feeble digestive powers, and irritable generative organs.

Tuberculosis, too frequent pregnancy, inflammation and adhesion of the placenta to the uterine wall are other disturbing influences.

Nephritis in the mother exercises an unfavorable influence upon the life of the fœtus. Cohen estimates the mortality from nephritis at seven per cent.; then follows placental endometritis, with necrosis of the connective tissue of the placenta, resulting in diminishing the surface available for aeration. The next factor is the enfeebled power of the left ventricle; the blood passes slightly from arteries to veins, the walls of the arterioles and capillaries deteriorate, dilate, and then leak. Blood extravasations often occur. Each small extravasation between the uterine wall and the foetal membranes tend to separate the latter from the uterus. When sufficient separation has occurred, the ovum becomes practically a foreign body, and, as such, is cast out.

Hypnotism in Pregnancy and Labor.

LOUIS LICHTSCHKIN (*Medical News*, September 3, 1898) describes some of his experiences with hypnotic treatment, first in the pathological conditions of pregnancy, then in normal labor, and, finally, in the puerperal state.

There are three abnormal conditions in pregnancy where suggestive therapeutics may be of use: (1) hyperemesis gravidarum; (2) anorexia, with disgust for certain articles of food; (3) abnormal craving for particular foods, especially unpalatable substances.

Simple vomiting occurring once or twice a day is an almost constant condition during at least the early months of pregnancy, but where it is so persistent and violent as to interfere with the nutrition of the patient, something must be

H. C. NEEB (*Amer. Jour. Obs., September, 1898*) was called on December 21, 1897, to see Mrs. D., aged 41 years, who was expecting to be confined the following April. While in a town ten miles distant she was taken with a hæmorrhage, and had been conveyed by carriage and train to her home. The hæmorrhage was not very severe, and there was little or no pain. The patient had felt [fœtal] movements for some days previous. Examination showed the uterus the size of a five-months' pregnancy, the cervix undilated, and no indications of labor. Believing an abortion to be imminent, a warm douche of bichloride solution was ordered, to be repeated every four hours. The next day the hæmorrhage was somewhat diminished; no pain or discomfort. The hæmorrhage gradually decreased and ceased in about ten days, and the patient was around the house as well as usual. Five weeks later a careful examination showed the uterus to be unchanged in size, but relaxed and doughy. On March 7, 1898, Mr. D. called, saying that his wife was bleeding profusely and had severe pain. A mild ana-dyne was prescribed, and the husband, who had been a professional nurse, was told to insert a tampon. On the writer's arrival, four hours later, he found the hæmorrhage restrained, and the pain gone. On removing the tampon a fœtus about five inches long, shrivelled and macerated, was found in the vagina. Anti-septic douches were prescribed, and during the next three days several irregular masses, resembling leather in appearance, were passed. These were evidently blood-clots retained since the first hæmorrhage. The temperature was normal until the fifth day, when there was a rise of one degree. Examination revealed a mass well up in the body of the uterus. With a dull curette this was withdrawn. It was about 2½ inches long, 1½ inches wide, and ¼ of an inch thick. This was evidently the placenta, which had undergone marked changes. The anterior surface was covered with membrane, dark in color; the posterior surface showed the uneven surface of separation, but the whole corpus was converted into a dense, white, glistening mass resembling adipocere. Recovery was uneventful and menstruation appeared in one month.

A Case of Retained Ovary.

The dressing should be held in place by plaster straps, and should not be disturbed for ten days, when the superficial skin wall sutures may be removed.

4. Accurate and firm suture of the uterine wall.
3. Great care to prevent exposure and handling of the other abdominal organs.
2. An aseptic technique.
1. Proper preparation of the patient before operation, and selection of suitable time for its performance.

The essentials for success in Cesarean sections are:

of these labors.

The advisability of a Cesarean section for a fibroid or other obstructing tumor must depend upon its size and location. Those within the pelvis proper give rise to the most serious complications. There is always danger of hæmorrhage, especially in submucous fibroids, and septicæmia is often a complication.

The advisability of a Cesarean section for a fibroid or other obstructing tumor must depend upon its size and location. Those within the pelvis proper give rise to the most serious complications. There is always danger of hæmorrhage, especially in submucous fibroids, and septicæmia is often a complication.

from the hospital.

the abdomen in good apposition. A quart of normal salt solution was thrown into the bowl, and ergot given hypodermically. Except for some irritability of the stomach, the recovery was uneventful, and on June 12th she was discharged

spontaneous cure usually occurs by the fourth month does much to sustain the courage and strength of the patient.

In acidity of the stomach, 10 grains of bismuth and 5 grains of oxalate of cerium, given in a glass of milk, will often be beneficial. Where there is a tartaral condition of the stomach, small doses of the tincture of nuxvomica, or Fowler's solution, may give relief. Drop doses of the compound tincture of iodine has availed in several severe cases. Faradization, blisters, etc., have not proved of much use in the writer's experience. Where constipation is a factor, small doses of calomel are sometimes effectual. Careful examination of the uterus should be made; any malposition corrected, and erosions of the cervix treated with a solution of nitrate of silver. Hot douches every six or eight hours gave more relief than anything else in one case. But the most important remedies in severe cases, and the only ones that can be relied upon, are the bromides, chloral, and preparations of opium, and these should be resorted to before the patient's strength becomes exhausted. Rectal alimentation plays a necessary part in sustaining the patient's strength, but it must be always remembered that the ememas must be small, and not repeated too often. Dilatation of the cervix has been highly recommended by some, but it is of doubtful value in many cases. Hygienic and pleasant surroundings are also important. Emptying of the uterus should not be resorted to until all other remedies fail.

Cæsarean Section—Recovery.

CHAS. F. DENNY (*Northwestern Lancet*, August 15, 1898) gives the previous history of the case as follows: In August, 1895, he attended Mrs. S. in her first confinement. The first stage was normal. After the membranes ruptured the pains became very strong, and the head advanced nearly through the os. After two hours no further progress was made; the head would advance and then recede. After fruitless efforts with the forceps a consultant was called, who was equally unsuccessful. There was evidently some obstruction in the pelvis preventing the descent of the head. The child was then turned and the body delivered, but the head could not be delivered. As the mother was growing very weak, craniotomy was performed and the child delivered. Examination later revealed a hard, firm tumor attached to the posterior wall of the uterus. Later on she became pregnant again, and an abortion was induced at the second month. In March she came again for advice and treatment, being nearly seven-months pregnant. Cæsarean section at full term was advised and consented to. On May 12, 1898, she was admitted to the hospital in the beginning of labor. Immediate preparations were made, and after most thorough sterilization of patient, doctors, and assistants, the incision was made from above the umbilicus to within a short distance of the pubes. The uterus, with a fibroid the size of a cocoon adherent to its posterior wall, was lifted out of the incision, packed about with towels wet with normal salt solution, and opened by a straight cut. The placenta was directly beneath the incision, and was torn through at once. A nine-and-a-half-pound child was delivered feet first and resuscitated by an assistant. All clots and membranes were removed from the inside of the uterus, which was washed out with hot salt solution. Strychnin was given hypodermically, as the patient was in a state of collapse, and she soon rallied. After the uterine wall had been sutured with kangaroo tendons, and the peritonæum united by a running catgut suture, deep sutures of silk-worm gut brought the walls of

of the patient for her life during this critical period of her existence depend largely upon the soundness of these organs.

Last, and as important as any, is the examination and measurement of the pelvis. This should be the routine practice in every case. For the external measurements the Martin pelvimeter is an instrument easily taken apart and carried in a bag, and is sufficiently accurate when supplemented by an internal examination, and for this the hand of the skilled accoucheur is the best instrument. Abnormalities of the pelvis can thus be discovered at an early stage, and preparations for a premature delivery be made, if necessary. Any malposition of the uterus must be noted and corrected. The presence of extra-uterine pregnancy or tumors may be discovered by an early examination, and appropriate action taken.

The action of the kidneys must be carefully watched throughout the entire course of pregnancy. Previous to the seventh month the urine should be tested at least once a month, but after that period it should be examined every week. After ascertaining, by these methods, the condition of the patient, she should be regarded somewhat as an athlete is regarded by his trainer, as one about to undergo a trial of strength and endurance. The food should be simple, well-cooked, and nutritious, and as pregnancy advances and pressure upon the stomach causes distress when hearty meals are taken, the taking of small quantities of food at frequent intervals may be advised. The clothing should be loose and light. The bowels must be kept active, if possible, by diet and exercise in the air, or, if necessary, by mild laxatives. Bathing of the whole body frequently is highly important, as it keeps the skin in a condition better fitted to aid the kidneys in eliminating waste products.

Not only do these measures tend to conserve the strength of the patient, but they render her less liable to sepsis, as a robust woman is better able to combat the entrance of septic germs.

Vomiting of Pregnancy.

E. L. PRIEST (*Kansas City Med. Record*, August, 1898) says that comparatively few women escape some derangement of the digestive organs during pregnancy, the most common form being nausea and vomiting, which varies in intensity from slight nausea in the morning to intractable cases where the life of both mother and fetus are threatened. The symptoms usually begin about the second month, but may appear earlier or later; after the sixth month it is rare for nausea to begin for the first time. A slight amount of nausea and vomiting are so common as to be considered almost physiological rather than pathological. The most generally accepted view of the pathology of this disorder is that it is a reflex disturbance. It is more frequent among women of a nervous temperament, and primipars seem to be oftener affected, though it is by no means uncommon for a woman to pass through her first pregnancy with no sickness, and suffer severely from nausea during subsequent pregnancies. The amount of pain and discomfort produced varies greatly. In some cases the patients remain strong and well-nourished in spite of persistent vomiting, while others are terribly depressed and exhausted.

In these cases it is important that the doctor should possess to the greatest degree the confidence of his patient. The assurance of the physician that a

may be excluded by circumcision and by the introduction of a searcher, while the pain of stone is characteristic and more severe. Tumor of the bladder and sarcoma of the kidney may also cause hæmaturia, but the former is very rare in children and the bleeding profuse, while the latter will give a tumor in the loin. Vesical irritability alone may arise from irritation of the rectum as ascariæ. To introduce a searcher an anæsthetic should always be given; the best instrument is the Thompson searcher with the short curve; it is usually about 15 F., and that will slip into the urethra of a child of three. If operation be decided upon, the stone must also be felt at that time, there being cases on record where it was not found after being felt. A thickened mucosa may be mistaken for stone but this only occurs after long cystitis and so may be ruled out in children. It may be necessary to fill the bladder with water to detect the stone, but the eye of the catheter must be held away from the bladder-wall as it is possible for the mucous membrane to be sucked into it with quite the characteristic click of a stone.

In India litholopy is chiefly practised in these cases and in this country lateral lithotomy has been usually preferred. Of late, however, the high operation has gained favor, and rightly in the opinion of the writer. Instead of using water to fill the bladder in connection with a water-bag in the rectum the writer has devised the plan of simply filling the bladder with air; a bicycle pump may be used, but the double bag of a Raquellin is preferable. Water is heavy and incompressible; it is necessary to fill both bladder and rectum, the distention of the bladder is rather in a lateral direction, and there is danger of rupturing either bladder or rectum. Air is weightless and elastic and lifts the bladder against the abdominal wall so as to give full three inches free from peritonæum as against at most three-fourths of an inch by the old method. The writer first cuts down to the transversalis fascia and then with finger in the wound causes an assistant to distend the bladder from a syringe of known capacity. After the operation the device of Dawbarn for maintaining continuous drainage is adopted; this consists partly of a glass T, the stem of which is connected with a rubber tube running to the bladder, and the arms of which are continuous with a rubber tube running from a fountain-syringe to the floor; in this way an automatic siphon-action is constantly maintained.

OBSTETRICS.

UNITED STATES.

Duties of Physicians to Pregnant Patients.

M. L. MOORE (*Southern California Practitioner*, July, 1898) wishes to emphasize the necessity of attention to certain vitally important details too often overlooked in the care of pregnant patients. Upon careful and repeated examinations of the patient depend the welfare of two, the mother and child. The first point to ascertain when a patient presents herself, is the actual existence of pregnancy and its duration. In the early periods this is often a matter of considerable difficulty, but diagnosis becomes easier as time advances. The next step is to obtain the patient's history and note her general physical condition. The heart, lungs, and kidneys must be very carefully examined, as the chances

rarely if at all in pure negroes. Of the pathogenesis of the disease we know nothing; from its occurrence in early life it might be thought due to some aberration in development, but from its wide distribution and progressive course it would seem to be caused by a general metabolic disturbance, as from derangement of some internal secretion. Its occurrence corresponds in time with the period of functional activity of the thymus, and it may be due to premature cessation of the secretion of this gland. It may be that the gland or its extract would be of value in the treatment of this disease, but the writer is not aware of its having been used, although improvement was observed in two cases in which the thyroid gland was employed. Following is a tabular summary of twenty cases studied by the author:

No.	Name.	Sex	Age at application.	Age at first symptom.	Similar disease in relatives.	Nervous disease in relatives.	Previous disease in childhood.	Complicated labor.	Trauma.
1	M. E. B. F.	F.	3½ years	9 "	Birth	Uncle in same.	Measles.	Instrument delivery.	
2	W. W. M.	M.	9 "	11 "	6 years	Father alcoholic.	Pneumonia 4 years.		
3	A. H. M.	M.	8 "	8 "	8 "	Father alcoholic.	Pneumonia 4 years.		
4	H. D. M.	M.	8 "	8 "	8 "	Father alcoholic.	Pneumonia 4 years.		
5	F. U. M.	M.	11 "	5½ "	11 "		Scarlet fever, 4 years.		
6	L. S. M.	M.	10 "	2½ "	10 "		Scarlet fever, 5 years.		
7	I. P. M.	M.	22 "	7 "	22 "		pneumonia 2 years.		
8	J. B. M.	M.	7 "	2 "	7 "			Instrument delivery.	
9	E. W. F.	F.	9 "	9 "	Birth	Uncle in same.	Measles.	Instrument delivery.	
10	C. S. M.	M.	9 "	9 "	1 year.	Uncle in same.	Measles.		
11	P. C. M.	M.	11 "	7 yrs.	1 year.	Brothers.	Pneumonia.		
12	A. C. M.	F.	9 "	7 "	7 "	Brothers.	Pneumonia.		
13	P. I. F.	F.	7½ "	1 year.	1 year.	Brothers.	Pneumonia.		
14	C. C. M.	M.	8 "	8 "	3 years	Grandfather paralyzed.	Hard labor.		
15	J. R. M.	M.	10½ "	1½ "	10½ "	Sister meningitis; sister dead during childhood.	Whooping-cough with aneurysm of aorta.	Large child; no menstruation.	
16	W. G. C. M.	M.	8½ "	1½ "	1½ "	Grandfather dead during childhood.	Whooping-cough with aneurysm of aorta.	Difficult labor; no instrumental delivery.	Fall from coach at one year; no sequel.
17	N. M. J. F.	F.	16 "	12 "	12 "		Measles, 2 years; whooping-cough, 4 yrs; influenza, 12 years.	Measles; no instrumental delivery; no injury.	Fall from window in childhood.
18	J. W. M.	M.	24 "	5 "	5 "		12 years. Varicella, influenza, whooping-cough, 4 yrs.		Fall from window in childhood.
19	E. J. R. M.	M.	19 "	5 "	5 "	Great-grand-uncle; grand-uncle.	Krysielas, 5 years.		Fall on back at 5 years.
20	G. K. M.	M.	22 "	3 "	3 "	Uncle; grand-uncle.	Chick'n-pox, 5 years.	Chick'n-pox, mumps, measles.	Mother suffered during pregnancy.

control motion—the motor centers—and is due to the action of the vitiated blood upon them; and the pathological connection between the motor apparatus which suffers in rheumatism and the motor-centers which are affected in chorea but corresponds to the physiological relation between them. Granting such a relationship, what is the exciting cause? The motor-centers, like the rest of the nervous system, are more susceptible to disturbance in the young and in the female sex; and while the patient may not have had rheumatism, a rheumatic diathesis is sufficient for some nervous shock or organic trouble to set up a chorea, the motor-centers being affected in people of such a diathesis because rheumatism is a disease of the parts of the body presided over by these centers. In sixteen cases tabulated by the writer there was an abundant history of rheumatic diathesis in the family of all except two; in one case the family history could not be obtained; the other was one of two cases that followed an attack of scarlet fever, but it is well known that rheumatism is a frequent complication of scarlet fever. The pathology of chorea is unknown, many cases revealing nothing on autopsy; in the majority, however, there is considerable change in the gray matter, in the motor-centers and in the cortex, seemingly due primarily to vascular changes that may be the result of infection. In treatment, absolute rest, however hard to carry out, is essential; the diet must be nutritious and easily digested, and baths are useful; of drugs, arsenic, iron, iodid or potash, manganese and tonics are employed, the most valuable being arsenic, which should be pushed to the physiological limit. Arsenic benefits these cases from its alterative effect upon the nutritive processes of the body, rheumatism being largely a disease of malnutrition and frequently benefited by arsenic. As a sedative the writer employs codeia combined with antikhama.

A Contribution to the Study of the Muscular Dystrophies.

A. A. БАННЕР (*Amer. Jour. of the Med. Sci.*, September, 1898) says that of so-called myopathies (muscular atrophies without appreciable affection of the cord) Erb was the first to point out that the essential lesions were the same whether atrophy or apparent hypertrophy took place; but in view of the possibility of changes in the spinal cord undemonstrable by our methods he preferred to call them "dystrophies." The different types are probably the same, differing in degree and distribution. The disease is characterized by hereditary or familial tendency, comparatively early onset, and predilection for males; the first symptom observed is generally weakness of voluntary muscles; at the same time or soon after the affected muscles are found wasted, though some may grow larger and firmer; with impaired mobility there is quantitative decrease in the response of the muscles to electric, mechanical, and reflex stimuli. The disease is of long duration and (it may be slowly) progressive; it is not directly fatal. It is to be distinguished from multiple neuritis and from degeneration or inflammation of the anterior horns of the spinal cord by the distribution of the weakness and wasting (the hands and feet escaping) in the absence of qualitative electric changes, in the firmness and possible enlargement of the muscles, and in its hereditary or familial character; from the former also it differs in its lack of sensory disturbances, and from the latter in the absence of fibrillary contractions and bulbous symptoms and its earlier onset; from the acute polymyositis of infancy its progressive rather than retrogressive course would distinguish it. It is interesting to note that the muscular dystrophies occur very

such deposits were found, an operation would probably be futile, except in the case of a mild tubercular process of the peritonæum.

The choice between the vaginal and the abdominal route of removing the uterus and tubes brings up a question much discussed by gynecologists. The author considers the abdominal method the better in these cases.

At present in but a small percentage of cases the disease has been recognized before or at the operation, but with experience during the operation and more care in the study of specimens, it may be determined in a much greater number of cases. If any doubt exists it would be better to extirpate both the uterus and tubes.

The Immediate and Remote Results of Seventy-one Alexander and Seventy-one Suspensio-uteri Operations.

W. L. BURRAGE (*Medical News*, October 8, 1898) gives the following general conclusions as the result of his experience: (1) The Alexander operation is preferable to the suspensio-uteri operation because it seeks to support the uterus by its natural ligaments. (2) The Alexander operation is indicated in retroversion, retroflexion, and retroposition without ovarian disease. (3) In retroposition with tight uterosacral ligaments, posterior colpotomy for the purpose of dividing the tight ligaments may be performed with advantage, together with Alexander's operation. (4) In ovarian prolapse, especially if the ovarian ligaments are long, the Alexander operation cannot be depended on to raise the ovaries into a normal position. (5) One round ligament is not sufficient to maintain the uterus in place. (6) The Edebohls operation, although requiring a larger time for its performance than the operation at the external ring, is the preferable operation because by it the round ligament, being uncovered in the entire length of the inguinal canal, is less liable to be broken; also, because this method does away with the need of anteverting the uterus bimanually in the course of the operation; and, finally, because of the secure manner in which the ligament is anchored and the inguinal canal closed, making subsequent hernia impossible. (7) Although the Alexander operation leaves two scars on the abdomen, they are so situated as to be covered by the pubic hair and are, subsequently, less of a disfigurement than is one scar in the median line. (8) The suspensio-uteri operation is indicated in retroversion, retroflexion, and retroposition, with ovarian or tubal disease, whether inflammatory affections or prolapse. (9) The best method of performing the suspension is by means of absorbable ligatures passed through the anterior and upper portions of the fundus uteri and through the parietal peritonæum and transversalis fascia only, thus an elastic band is created between the parietes and the uterus, which maintains the uterus in place and does not cause interference with the enlargement of the anterior fundus during subsequent pregnancy. (10) Suspensio uteri leaves but one weak spot in the abdominal parietes predisposing to hernia, instead of two as in the Alexander operation. (11) In the great majority of cases neither operation is the cause of complication in subsequent pregnancy. Whatever complications do occur are not of a serious nature. (12) In all cases of doubtful diagnosis in which the condition of the ovaries and tubes cannot be determined accurately the suspensio-uteri operation is to be preferred to the Alexander operation.

PÆDIATRICS.

UNITED STATES.

Indigestion in Infants and Children.

C. KING (*Buffalo Med. Jour.*, September, 1898) comparing the physiology of the digestion of children with that of adults, notes that in infants the salivary glands are poorly developed, making the digestion of starch and the swallowing of solid food difficult; the stomach is nearly perpendicular in position and the gastric glands but little developed, so that its capability of digesting casein has been probably overestimated, while fluids pass almost immediately into the intestine; the secretion of the liver is poor in biliary acids, so that the digestive action of the pepsin is probably continued in the intestine; also, the intestinal canal is longer in proportion but its muscular activity less, so that its contents are retained for a greater time. Indigestion when acute is generally due to the stomach; when chronic, to the intestine. The immediate vomiting of fluid milk can hardly be called indigestion but is rather a preventative of the same; but when the vomiting is delayed till the ejecta consist of curds we may assume hyperacidity or some other derangement of the stomach. Chronic indigestion is due to habitual congestion of the mucous membrane, as from the use of beer or unsuitable foods; to a scrofulous, gouty or lithæmic diathesis; to habitual overfeeding, neglect of sanitary precautions, fatigue, and acute diseases; it may also be due to dilatation and atony of the stomach as in rickets. Vomiting is not common but there is every symptom of malnutrition; there are restlessness and night terrors, constipation, sometimes alternating with diarrhoea, abdominal pain, flatulence, perhaps enuresis, sometimes attacks of fever, cough and rapid breathing; microscopical examination of the stools will show shreds of undigested food and many oil-globules. The symptoms in infants are essentially the same as in older children. Treatment should begin with changes in food and feeding. Infants should be nursed regularly at the proper intervals, and if the breast-milk be at fault from pregnancy, menstruation or other cause, cow's milk properly diluted should be substituted. Constipation may be treated by calomel, 1-10 to 1-20 grain from four to six times a day, intermitted for a few days every fortnight. Hydratics and massage are useful, but habitual hot-water injections make matters worse. Exercise, out-door air and cold sponging should be prescribed. Diastase and pancreatin are useful, as are also pepsin and pancreatin combined. Hydrochloric acid may be given to older children. Predigested foods should not be employed for any length of time. Flatulence and pain may be often relieved by hot-water injections or by hot or cold applications to the abdomen, also bismuth, subnitrate or subgallate, is one of the best intestinal antiseptics and is useful in habitual flatulence and in skin eruptions from indigestion. The anæmia should be met with tonics, restlessness with bromides, and intestinal parasites should be sought for.

Chorea.

W. F. BOGGESS (*Pædiatrics*, September 1, 1898) in considering the ætiological factors of chorea emphasizes the importance of the rheumatic diathesis. No one doubts the constitutionality of rheumatism or the hereditary transmission of some peculiar condition of the motor system which we recognize as the rheumatic diathesis; chorea is a disease of those parts whose function it is to initiate and

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ABDOMINAL *VERSUS* VAGINAL SECTION IN PELVIC
SURGERY.*

BY JOSEPH PRICE, M.D., PHILADELPHIA.

I appreciate the privilege of being here, that kindly, personally considerate courtesy conveyed by the invitation to come here. The courtesy was the more gratifying coming as it did from the great medical center of the West, from a city with eminent men in every department of medicine and surgery, men, the records of whose work will make lesson-pages in the annals of the profession. My invitation here was flattering to me; it was yet something more and better, it was an expression of the generous spirit of eminent men of our American profession. This spirit is worthy and eminently characteristic. It is a factor in our advances. Pardon me if I contrast this American spirit in our profession, for as such I will designate it, with that of our foreign brothers, especially those of the Continent. Abroad only two Americans were ever asked to operate, Sims and Bozeman, while Goss, Agnew and Emmet traveled abroad and mingled with the profession of the old countries and, while in their lines they were the peers of the best at home or abroad, they were never honored with an invitation to operate. This spirit is difficult to understand. Few of the eminent operators of Europe visit this country who are not invited to operate a number of times. We take it as a privilege and profit to us to witness their work. The teaching in surgery, aside from the very little theory associated with it, is essentially clinical.

It is very difficult to consider some of the opinions of recent adoption by surgeons with a judicial temper and impartiality. These

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differing opinions have a surgical importance, they raise problems and their discussion will not and should not down until satisfactorily settled. Many of these opinions would have little weight if they were not shared by some of the leading men, those who stand as the exponents of the most advanced thought and enlightened opinions of the profession. While these differences of opinion on the part of thoughtful men serve to stimulate investigation and the careful noting of the facts of experience, yet where they are little more than evidence of vacillating surgical judgment they are obstructive.

If my own views are distinct and have something of a dogmatic ring it is because they are views forced upon me by actual experience and observation. Experience alone can give us a logical understanding, enable us to speak with something of practical wisdom of those troubles with which we have to deal. Many practising the vaginal operation have the impression that the operation has not been universally adopted because physicians do not understand it, that it is difficult, dangerous or impossible in their hands; that it requires for its successful performance a peculiar aptitude, a special training and adeptness. This is a mistake. A number of men who oppose the vaginal operation have done the operation successfully, their mortality has been quite as low as that of those who advocate and make the procedure their adopted one; they do the supra-pubic influenced by the logic of their experience, by purely surgical and pathological reasons, it is the operation of their choice because it gives the most complete results, leaves less dangerous or annoying sequelæ, less risk of the necessity of repeated operations. By the supra-pubic route surgical cleanliness and surgical completeness is possible; by the vaginal it is not.

The difference between the advocates of the abdominal method and those who criticize it is that the advocate speaks according to his knowledge, the facts actual clinical experience has confirmed; the critic according to his failures, disappointments, and prejudices. The one has uniform success sustaining him, the other humiliating failures which inspire and give coloring to his opinions. He attacks the wisdom of a procedure, which in his hands has failed, rather than put in serious question his own art and science, than with patient and keenest scrutiny search for the mistakes in use which are the cause of his failures. The truth is he adopts the typical motto: "I have not been successful with this method, I will try something else." His early efforts in supra-pubic work were failures or disas-

ters, he met with the unexpected, he found the work complicated and difficult.

He is disappointed, discouraged and thirsty, goes to the Continent and comes back loaded. The French and Belgians never were successful in supra-pubic operations. The successful operators, American, English, and German, have practised both methods for years, adopting the supra-pubic procedure for tubal and ovarian disease and the vaginal route for malignancy. The results of these men are uniformly good, they adapt their operation to actual pathological conditions, they operate for actual disease and not for all sorts of fancied conditions, for vague nervous disorders due frequently to emotional susceptibility.

It is simply amazing how common it is with some operators to begin two distinct operations and complete neither. We see good operators make a free opening in the abdomen, inspect and back out and then attempt the vaginal route and abandon it after puncture of one or more accumulations and drainage. They attempt the vaginal route to extirpate but don't do it, they end with mere puncture and drainage, and the temporary relief is called a cure. The drainage of one or more pus-pockets, where many exist in a large tortuous pyriform tube or tubes, and where we have one or more ovarian abscesses never cures; the only cure is the removal of the diseased member.

We need only appeal to actual clinical facts in the experience of some of our prominent vaginal operators to show how difficult and incomplete their work is when they encounter deep-seated and complicated conditions, and also in how very many cases the result is fatal. For instance, Dr. Mann of Buffalo invited three prominent operators, two from abroad and one of our own honored countrymen, to do three complicated operations. Second did one, Jacobs one and Sutton one. They all died. In relation to results from any procedure no reliance can be placed in the statistics of men who select only favorable cases for operation and reject the unfavorable. Those men have no right to compare their results with those of men who do not reject the desperate cases. There is something vicious in the criticism of the statistics of the mortality of operators who give every patient who comes to them every possible chance of life, who do not reason; "This is easy, I will do it:" "Here I have something involving a number of vital organs, the adhesions are general, everything is matted and bound together, the surgery is difficult and the result doubtful, some one else can do it."

Our judgments in the matter of selecting a procedure in any given case is strongly influenced by our Professors and those of others. We are slow to abandon that which we have found safe, strongly indisposed to believe there is a better way.

This is one form in which our conservatism finds expression. But the fact remains that there is one way better than all other ways, it is the one way we conscientiously and zealously seek to find. We cannot safely lay down and mark out dogmatically any procedure which in none of its details is to be departed from. In applying a particular procedure to a given case we may get approximately perfect results, but in no two cases, in our surgery, while we may find similar do we find identical conditions. The most skilled operator never knows until he enters the abdomen the exact and entire conditions with which he will have to deal.

Where the conditions are obscure, when signs and symptoms are not positive, the supra-pubic route is the safe route.

Imperfect and incomplete work by the abdominal route is a feeble argument in favor of the vaginal. The fault, where fault there is, is not in the procedure but in the operator, his lack of wide clinical experience in dealing with gynæcological troubles or lack of the surgical courage to complete the work he begins. And the lack of discreet courage and sound surgical judgment is responsible for many failures whatever the procedure. If complications make conditions inoperable from above they also make them inoperable from below. The removal of pathological conditions is easier from above than from below because the structures are more easily defined and lines of cleavage or enucleation are from important structures and not toward them or into them; there is no difficulty in securing arteries, they can be seen and felt pulsating beneath the fingers. The operation is precise, it can be made of mathematical certainty in its limits; the incision is directly under the eye and under the absolute control of the fingers, it is not a stab about in the dark among vital organs as in the vaginal, it enables the easy freeing of omentum and bowel when adherent, and the repair of all disorganized parts. These are important considerations.

Careful examination of statistics coming from reliable sources go to show that abdominal pain continues in very many cases operated upon by the vaginal route and follows too many imperfectly, incompletely, and ignorantly operated upon by the supra-pubic method.

These disagreeable symptoms complained of by patients after operation are almost always the result of leaving omental and intes-

tional adhesions. Where all adhesions are carefully and thoroughly separated, continuous abdominal pain, rendering the patient's existence miserable and disabling her for useful employment, will not follow. Frequently when we are searching for lesions we only find general adhesions of the whole mass of intestines; thoroughly separating these we set the patient on the way to happy recovery.

Badly selected material has been responsible for much post-operative sequelæ primarily for a number of deaths. Ligating with coarse and heavy ligatures makes insecure work. Ligating pedicles with plaited ligatures is commonly followed by hæmorrhage. It is difficult to tie a surgical knot tightly and securely with large coarse material. Commercial articles are never safe materials. Surgeons should select and prepare their own materials. Those who do soon recognize the difference in results. Ligatures sometimes break from having been soaked in some antiseptic solution. The use of improper materials results in adhesions and pathological conditions that did not exist before the operation.

The long incision imperfectly closed favors long and needless exposure; excessive manipulation and the use of irritating chemical solutions all result in omental, bowel and other adhesions from which the patient continues to suffer if not relieved by repeated operations. Silver wire, silk worm, chromicised catgut, plaited ligatures and all large materials result in abscesses and adhesions, give us all the vicious sequelæ of dead ligatures surrounded by filth. Some good surgeons have used the silver wire about the pedicle in cystoma. A prominent operator told me he lost two patients with abscesses at the seat of the wire six weeks after the operations. Some of the catgut ligatures used by Keith were discharged through the bladder, I have known huge ligatures to be discharged by the bowel.

Dead ligatures and unclean operations, whether supra-pubic or vaginal, low or high, or whatever the character, are responsible for sinuses in numerous cases.

It is claimed by the advocates of extirpation that if suppurative forms of tubal and ovarian disease exist, or tubal occlusion with retention, that not only the appendages are worthless but the uterus is useless and infectious, that the septic uterus should also be removed.

The profession is too prone to talk about the septic uterus. The patient with a septic uterus is a very ill patient and usually dies and that speedily. There are few things kill a woman quicker than

a septic uterus. I am daily doing sections and while dealing with all sorts of complications and adhesions, dangerous twists and contortions, strong adhesions or fixation of crossed viscera, the sigmoid strongly adherent to anterior face of right tube and broad ligament, the cæcum and appendix out of position and adherent, I cannot but experience a sense of surprise that experienced surgeons who have in the past done good abdominal or supra-pubic work, can forget or ignore the lessons of their experience and deliberately extirpate the little healthy uterus and pass by pathological lesions and complications constituting the real and only source of trouble. That is a pithy utterance of Dr. Bantock's: "In presence of chronic disease of the appendages, he was a wise man who refrained from active interference with the uterus."

The sterility of many wives is due to tinkering. I can recall the wives of many physicians whose sufferings dated from meddling surgery, dilatations, curettement and the application of various chemical solutions. If they had never been examined and tampered with they would have stood a good chance of having children.

The advocates of puncture and vaginal-drainage methods commonly refer to maternity following their so-called conservative practices.

Some years since a gentleman in Washington went so far as to say that after incision and drainage by vagina in a case of double pyosalpinx recovery had followed and the woman had borne children. He might as well have said she had conceived notwithstanding her husband had been castrated.

The beginning of our trouble in the choice of method of procedure lies in errors of diagnosis. Our surgery would be more judicious and successful if more care and skill was exercised in determining definitely the trouble for which we operate and strictly adapt our procedure to actual conditions. We do not say that any one method should be pursued in all cases, symptoms and conditions must largely guide in the selection of a procedure.

It is important to select with great care the cases favorable to the application of any particular method. As an exploratory operation the vaginal route has none of the value claimed for it.

If the ordinary or common symptoms of disease are absent, if there is no evidence of growth, no evidence of fixation, there is not the slightest indication for an exploratory operation either from above or below. We hear too much of exploratory operations. Men familiar with the symptoms of abdominal troubles rarely resort

to them. They operate only when there are marked symptoms of trouble and they about always find trouble, repeatedly greater trouble than they anticipated. It may not be the exact trouble they diagnosed, but it is a surgical trouble requiring in many cases difficult surgery in its removal. The exploratory operation is an unnecessary infliction of suffering.

Goodell, Batty, Gaillard Thomas and other prominent operators determined the value of the vaginal route for the removal of small growths by rejecting it after a fair trial.

Vaginal drainage is not the most perfect, has never given the best results, because abnormal conditions existing above have not been given sufficient attention to favor drainage.

As to the claim that there is less shock by the vaginal route I will again refer to the three deaths in the three cases respectively in the hands of three deservedly eminent surgeons.

Notwithstanding all the machinery and manipulation used by the vaginal advocates there still seems to be an element of doubt or uncertainty in their faith; they tie vessels and they clamp them for thirty-six hours. If the tying is all right they do not need to clamp. If the clamp is all right they do not need the ligature.

The claim, that risks of infection by soiling the peritonæum are minimized is an error. In many cases of pelvic suppuration we find quite general infection and peritonæal soiling, and it is in this great group of cases that the peritonæal toilet has great value. There is no excuse to be made for bowel trauma where adhesions are to be freed and bowel repaired.

Sinuses are just as frequent and distressing in the vaginal vault as in the abdominal incision. Menopause nervous phenomena are about the same in both procedures when completed.

Some of the prominent operators by the vaginal route urge the removal of the uterus because of its numerous lesions, this is an error, the lesions are commonly found to be of viscera and surrounding organs. In extra-uterine pregnancy the sac is frequently found adherent to the uterus but is easily stripped from it by the abdominal route, and the uterus remains healthy. We also find lesions of the tubes and ovaries and peri-uterine disease. In ectopic pregnancy the simple removal of the offending side leaves a healthy child-bearing woman. Tubal and ovarian disease is so frequently associated with the early development of multinodular fibroids that I am convinced that tubal and ovarian disease bears a strong causal relation to fibroid disease. Nearly all working by the vaginal route

admit the great danger of subsequent fistula and classify as follows: 1st, peritonæal fistulæ; 2nd, vesical fistulæ; 3rd, ureteral fistulæ; 4th, intestinal fistulæ.

In a series of four hundred and three cases of vaginal hysterectomy, including about all conditions for which it is done, total general prolapses, etc., Jacobs had nine fistulæ after the operations, yet he said: "Subsequent fistulæ is exceedingly rare," that he has observed "five intestinal, three vesical and one ureteral fistulæ." Further he says "in most of the cases these fistulæ existed prior to the operation, that is to say, they were fistulous passages which extended between the purulent foci and some part of the intestine. These passages were so large and with walls so well organized that the disappearance of the purulent pockets did not suffice to bring about the subsequent and spontaneous cure."

In all such cases I relieve all adhesions, trim and repair all lesions with the most pleasing results, without any of the sequelæ of fistulous openings given by Jacobs as following the vaginal procedure. Operations for the closure of such fistulæ are generally admitted to be the most trying, complicated, and tedious in surgery and but few men are willing to attempt them.

In the series of four hundred and three cases referred to section is practised in one per cent for the cure of fistulæ, with one death. Jacobs recorded one hundred and fifty-seven cases of serious supuration upon which he has operated and that in twenty-one cases (about thirteen per cent.) he left parts of the appendages in the pelvis and that the adhesions of the appendages were so solid that he could not complete their extirpation. This percentage of incompleting operations occurs in cases in the hands of a gynæcological missionary. It is fair to suppose that the nine fistulæ occurred in the unfinished cases.

To demonstrate how simple his work was in his series of 403 cases, he gives eighty-two as chronic parenchymatous salpingo-oöphoritis, without adjacent or uterine complications, with three deaths; a high mortality in simple cases for a method for which so much is claimed by its advocates. Choice of cases for the vaginal route is very simple, it is the operation of choice where we find malignancy of the uterine cervix or fundus; the extirpation is easy, simple and rapid.

The discovery that the vaginal is an easy and rapid operation in selected cases has influenced many to adopt and practise it. Very many operators seek for an easy road by which to deal with pelvic

troubles. Without training, without passing through a long and laborious experience they expect to learn to do difficult operations by a mere cursory reading of the literature of the subject and the witnessing of a few operations. They observe the ease and rapidity with which the experienced operator deals with deep hidden and complex conditions and suddenly take up the mistaken belief that they can do the same thing with equally fortunate results.

Few things have worked more gynæcological mischief, entailed more misery upon women than the ambition of a number of operators to be original, to introduce some novelty in the way of a surgical procedure. "My procedure," "My method," "My modification" are the very common expressions found in our surgical literature.

It is claimed for vaginal procedures that they are something new. The old clinicians tell us very fully of their vaginal work. The old literature upon the subject is abundant, the vaginal methods of our friends do not lack antiquity. There is the possibility, in fact the certainty, that some of the old men did better work than many of the "New men" of the period because they were less meddling, more definite in diagnosis and possessed more varied knowledge and experience.

THE INDICATIONS FOR INTERFERENCE BY WAY OF
THE VAGINA IN PELVIC DISEASES: AN ANSWER
TO DR. JOSEPH PRICE.*

BY FERNAND HENROTIN, M.D., CHICAGO.

The vaginal route is a proper channel to attack pelvic diseases in women in certain selected cases only. As better inspection and palpation of the pelvic organs can be obtained by an abdominal incision, it is conceded that all patients to be operated vaginally must present special indications, and that in cases of doubt, the abdominal incision is most proper.

In favor of vaginal section it may be said that where the same results can be obtained vaginally, this route should be accepted as it avoids the abdominal scar, lessens the shock, and is much less frequently followed by hernia.

Although one of the first to advocate the treatment of pelvic

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affections by way of the vagina in selected cases, I am most willing to admit that this method is not so much in vogue with experienced operators as it was say three years ago, and for very good reasons which will be shown in speaking of special cases. There is one reason which might be stated here, and that is that our knowledge of the prevalence of appendicitis in conjunction with pelvic trouble makes it incumbent to operate by an abdominal incision when any degree of this affection is even suspected, and we have learned in later years that this condition is common.

Taking it for granted that a patient requires an operation and that there is no suspicion of appendicitis, the most important factor in deciding upon the direction of attack is the position of the parts affected and the condition of the vagina. Little need be said on this score. If the result desired can be obtained either from above or below, a thin patient with a virgin vagina whose disease is situated high up, should be operated through an abdominal incision, while a stout patient with a large canal, whose disease pushes down the vaginal vault, and can hardly be felt above the pelvis, should be attacked from below. Intermediate cases must be judged by the operator. Surgical sense and individual skill guide the actions of any surgeon. Different men may attain the same result by different methods. Results stamp the individual.

The primary incision, whether it be through the abdomen above the pelvis or through the vaginal vault, is, to a degree, always an exploration. The infinite variety of intra-abdominal complications makes it so. This primary incision is as frequently curative by way of the vagina, and even more frequently so, than the abdominal cut. This is by reason of the ease and directness of drainage.

The early vaginal incision to those who understand it and have the skill to perform it properly is the ideal of conservative surgery. I may be mistaken, but I must say it, that I do not believe there are twenty men in the world who fully realize what an early incision accomplishes, and who perform it properly. Permit a few words of explanation as to the value and character of this procedure, as I view it. This incision like all vaginal operations is only applicable to selected cases. By early vaginal incision is meant the incision that cures the localized septic pelvic infection in its very incipiency, the woman remaining thereafter not only symptomatically, but physiologically, perfect. It is particularly applicable to the treatment of acute ovarian abscess. This disease I believe is more common by far than is generally supposed. Its most general cause is

abortion and trauma. It is the most common extra-uterine form of pelvic sepsis that occurs following early miscarriages, criminal abortion, and unclean surgical manipulations. After two or three days of fever the presence of exudate can usually be recognized at the sides or behind the uterus. This means ovarian abscess in eight or nine cases out of ten. An incision one inch long into the pelvic cavity, and an incision or tear with the finger-nail into the ovary, which is enlarged and semi-fluctuating, will give egress to from one dram to one ounce of pus, and a small wick of gauze placed in that opening in the ovary, and two or three wicks in the vaginal opening, all of them leading to the vagina, will cure nineteen out of twenty of such cases at once, and if performed very early will leave the woman after a few weeks in as perfect condition as she ever was, save possibly a little posterior thickening which eventually disappears. This little operation, which in itself does not occupy five minutes, must however be done with intelligence and skill. Frequently both ovaries are simultaneously affected. All neighboring adhesions must be carefully destroyed, the general cavity well opened and drained, and the work done in a cleanly, surgical manner. But it can all be done without danger in a few minutes, and no man with sense, without prejudice, can help but acknowledge that this is immeasurably superior to a laparotomy with abdominal incision. This early incision is not applicable to old pus-tubes or old ovarian abscesses, for pus-tubes are developed insidiously without acute symptoms, so that they are not discovered early, while old ovarian abscesses are simply cases that were improperly treated and not incised, as they should have been, in the beginning. The gynecological surgeon is not doing many of these early incisions, because he does not see the cases very early, they usually being treated with poultices and hot douches by the family physician, and because not seeing many early cases, he has not had an opportunity to recognize the merit of the method most available and valuable. *The later vaginal incision*, though not always so certainly curative, is, nevertheless, equally important. Old pus-tubes adherent low down in the Douglas sac, old ovarian abscesses, miscellaneous pus collections when they are within easy reach from the vagina, can often, in spite of what Dr. Price or his friends say, be entirely cured by a free incision and evacuation of liquid contents. The same may be said of septic collections of blood from ectopic gestation and some forms of serous accumulations. The usual mistake made in old cases is lack of thoroughness. Some part of the dis-

case is apt to be overlooked. The fear of opening the general cavity is frequently the cause of this mistake in technique. This cavity should whenever possible be thoroughly opened, for only in that way can all the adhesions be broken up and the pelvis properly drained. It is very true that every single case is not cured, and that occasionally a more thorough or radical operation becomes necessary later, but there is so little shock to these incisions, so slight mutilation and so little general disturbances, that when the cases are adjudged as proper for incision, it is well worth the trial, for a very large number of them will remain permanently cured. Many patients treated by incision, properly performed, sit up in five or six days, and return home in ten or twelve, even though the disease may have existed for years.

Vaginal Hysterectomy.

This operation is sometimes advisable and in some cases is infinitely superior to any abdominal operation that could be performed on the same patient. Let me add, *not often*. Experienced operators, who are equally skilled in vaginal as well as in abdominal work, are doing less vaginal work now than they did two years ago. At least that is my belief. Not because vaginal hysterectomy is not a very proper and sometimes the best operation to be performed in certain cases, but because it is a radical operation, and because the field of all radical operations has been much restricted for the last few years. Salpingectomy, ovarian resection, and vaginal incision have all done their share in the salvation of scores of uteri. A retrospective glance over the events of the last few years in the evolution of the present treatment of septic pelvic disease will at once make clear the reason why many differences of opinion still exist.

Up to three or four years ago the Tait operation was in vogue. Open the abdomen, remove tubes and ovaries, clean out the pus. If there was pus, drain it; if not, close with simple through-and-through sutures. Pean in 1890 and Segond in 1891 declared in favor of vaginal hysterectomy. This created great excitement and an era of uterine ablations followed which has hardly subsided, but is showing symptoms of abatement. The results obtained were a distinct advance over their previous work. If they had had a few Prices among them to teach them the superb results of American abdominal work the pendulum would not have swung so far. (In September, 1891, I performed the first deliberate vaginal hysterectomy.)

tomy for bilateral suppuration. I purposely restricted the indications to suppurative cases only.) Not by any suggestions of mine, but more because of the visit of Americans to France and of French operators to this country the method was very commonly adopted. In the completeness of the cure as well as in the results obtained it was a distinct advance over the work of the miscellaneous operators, though at no time was it superior in regard to mortality to that of Price, Tait, Kelly, and others. Almost at the same time Baldy, Pryor, Krug, Kelly, and others demonstrated the perfect feasibility of removing the uterus by the abdominal route, and it became acknowledged in many circles that removal of [the uterus was an advantage because so many operative successes were not cures, and because removal of the uterus often completed the cure after the primary operation had failed. Following this, as the liability to hernia and unsightly scars became an argument of moment in discussion, a revival in abdominal wound suture occurred which gave us the cosmetic scar of the present and lead eventually to the almost total abandonment of silk in the abdomen and the substitution of catgut. Then the proposed wholesale ablation of wombs became nauseating to the progressive American and, after many trials in conservative work, led particularly by Polk of New York, we arrived at our present status which can be summed up as follows: "Open the abdomen with a clean cut above the pelvis, see what you are doing and do it carefully. Use the modern prepared catgut, and that only, unless for exceptionally plain indications.

"To effect a cure bear in mind the following facts: Ovarian tissue is necessary for the proper physiological preservation of woman's sexual life. Therefore, healthy ovarian tissue should never be sacrificed unless the abolishment of sexual function is distinctly indicated. When a Fallopian tube is materially diseased by septic germs, it is almost always impervious at both extremities, and as the limit of the disease is indefinite, such diseased tubes had better be removed well into the cornua of the uterus.

"Though complete removal of both fallopian tubes entails sterility, so far as we can judge, at present, such removal does not necessarily interfere with any other sexual function of woman. When in operating for septic pelvic disease it becomes necessary to remove the ovaries, it is usually advisable to remove the uterus also."

Though these conclusions in their entirety may not be acceptable to you all, I believe they are bound to become so. I am particular to mention all these details, because I consider them all as important

in answering the question why some men are not operating so frequently by the vagina as formerly. It is because all of these improvements in the management of pelvic diseases are of recent date and their performance in the opinion of many of us, though possible, is neither as safe nor as perfectly accomplished by the vagina as by the abdomen.

While abdominal operators were thus improving their methods and perfecting their results the vaginal workers were developing the possibilities of the vaginal incision, and I claim to-day that one, if not the greatest of modern conservative gynæcological triumphs, is the thoroughly understood and properly performed vaginal section in selected cases—and there are many.

As regards vaginal hysterectomy it still has a perfectly defined position.

In women necessarily sterile and approaching the menopause, where bilateral peri-uterine septic disease exists, and is situated low in the pelvic and with a roomy vagina, particularly in those with extensive and disseminated suppuration, who are low with septic fever, and especially where the abdominal wall is very fat, in these I say, vaginal hysterectomy is still by far the preferable operation, and when skillfully performed in a large series will always give the best results.

Having had to prolong this paper beyond its intended length to make the argument complete, I have not mentioned many operations done through the vagina, particularly the operations for fibroids. Even here there is a sphere for vaginal operation, curtailed, however, very much by the conservative myomectomy work, so intelligently and skillfully demonstrated by Howard Kelly. The results obtained by the American surgeons in this field are the most magnificent of all and a lasting monument to native skill, but if I had a sister over forty years of age who had a fibroid tumor low in the pelvis, as large as two fists, which was causing trouble enough to call for its removal, and if she had, as many such women have, from four to six inches of fat in the abdominal wall, unless there was some very strong contra-indication, I should advise her to have it removed with the uterus per vaginam.

As regards the various vaginal fixations of the uterus and the vaginal conservative operations on the tubes and ovaries, and the many clever tricks played through a small vaginal incision, I believe they will pass with time. Almost every operator who does these operations has a sick day in store if he has not had it already. I do not

believe there is anything safer than a nice straight cut above the pelvis, and no better light than the sunlight from above to do fine work with. In operating recently ruptured cases of ectopic gestation, recent enough that hæmorrhage is still an element of danger, there is no doubt that operating by a vaginal incision is a dangerous expedient, even though it is recommended by authorities of a good deal of repute.

Before closing I desire to address a few words to Dr. Price. Ever since vaginal work came into vogue in this country the doctor has never failed to attack all vaginal operators, and without very much discrimination. The very great amount of work he has done, and the skillful manner in which he has learned to do it, his large acquaintances and his many friends, all these factors have contributed to give his opinion great weight. Nevertheless, the movement has advanced because it is founded on proper principles. The many abuses of the method by some cannot weigh against the well-directed efforts of conscientious operators endeavoring to do their best for the best of the patient. Let him remember that among the advanced men the vaginal route for operating was never mentioned except as a choice for selected cases.

The development in conservatism which has occurred in the last two years has convinced many surgeons that the suprapubic method is preferable in many cases which formally were treated radically, and which they *then* believed could be best treated by vaginal hysterectomy. The recognition of the frequency of concurrent lesions of the appendix, and it is but just to say the magnificent results obtained by some American surgeons who seldom, if ever, operate by the vagina (except in cancer) has also had a great weight in the deciding of this question.

Nevertheless, I believe I voice the opinion of well-balanced men who have learned both methods by experience, when I say that vaginal operations for intra-abdominal pelvic disease has still a wide field where the most skillfully performed abdominal operations can never replace them.

To demonstrate my own opinion as regards selection I present a table showing the frequency of vaginal as compared with abdominal incisions and the character of the intervention, where it will be noticed what an important factor the conservative operation has become, and how frequently I believe vaginal section applicable.

These operations were performed from January, 1897 to July, 1898. Reference is made only to such as were done for clearly de-

COMPLETE INSPECTION OF THE RECTUM BY MEANS
OF NEWER MECHANICAL CONTRIVANCES.*

BY THOS. CHARLES MARTIN, M. D.,

Teacher of Proctology in the Cleveland College of Physicians and Surgeons; Proctologist to the Cleveland General Hospital; Fellow of the American Association of Gynecologists and Obstetricians; Member of the American Medical Association, etc.

Special paraphernalia and much practice in their use are necessary for a rapid and painless inspection of the rectum.

The chair which is shown in the illustrations was designed by me to facilitate the placing of the patient in a new posture which is equivalent to the knee-chest posture. The improvement on the Yale chair consists of a knee-piece which is placed on the left arm, of a mechanism attached to the running-gear which provides for the new movements, of a shoulder-strap, and an illumination-apparatus which is susceptible of adjustment in an infinite number of positions.

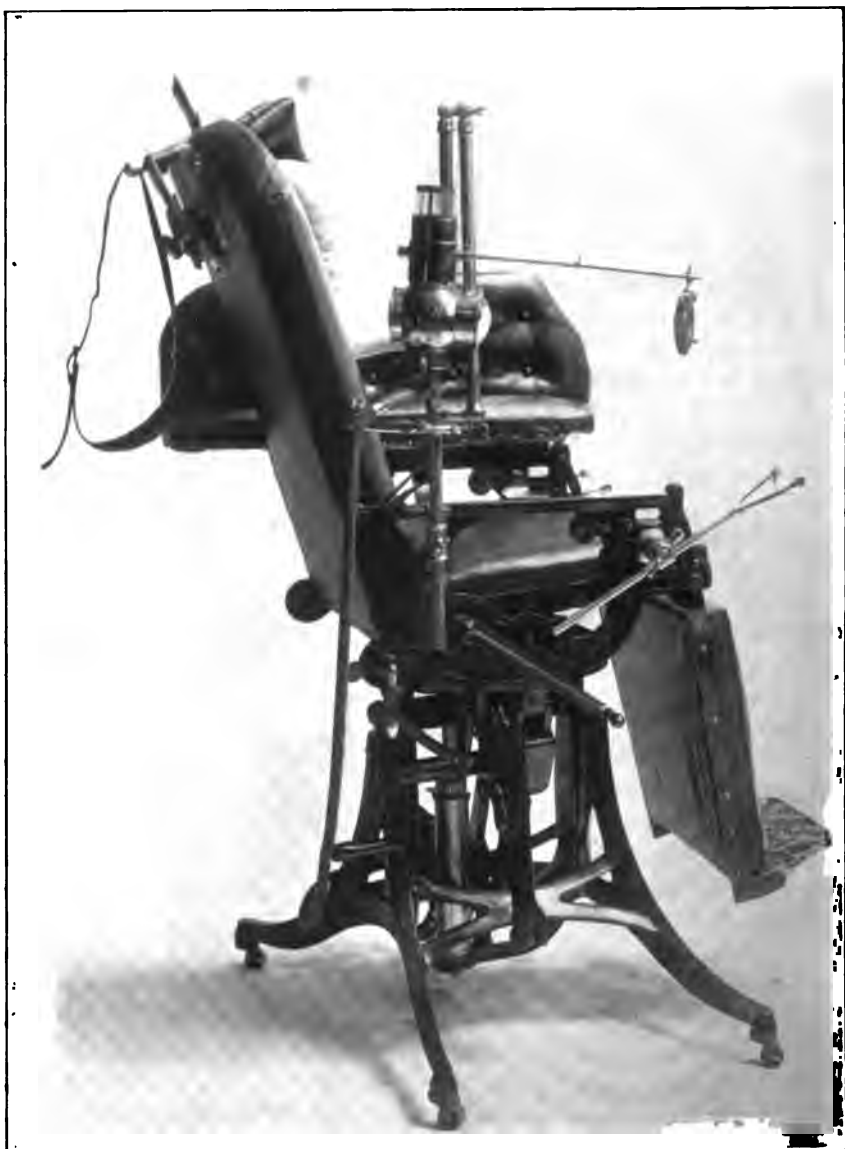
Figure 1 exhibits the chair and the attached illumination-apparatus in the first position. Figure 2 shows the second position and Figure 3 shows the chair and the illumination-apparatus in the position for the third step in the procedure. Figure 1 shows, also, hanging from the head of the chair, a small pillow and the shoulder-strap.

The anoscope (Figure 4) consists of a short cylindrical tube open at the ends. It is two inches (5.08 cm.) in length and seven-eighths of an inch (2.22 cm.) in diameter. The proximal end is provided with a trumpet-shaped expansion and a strong handle. The distinctive feature of my anoscope is the peculiar form of its obturator (Figure 6), which has a capacity for a multiplicity of uses.

The obturator consists of a hard rubber cylinder in the middle of which is fixed a brass tube for purposes of irrigation. Its surface is fluted in such a manner that it may be made to lock in any of several positions upon a tubercle within the cylinder. These flutes also provide for escape from the rectum of fluids and gases under certain conditions. The contracted neck near the distal end of the obturator provides a cup to facilitate the application of ointments to certain rectal areas (Figure 8). The contracted neck is a feature which

*Read at a Meeting of the Mississippi Valley Medical Association, Nashville, October 10-14, 1898.

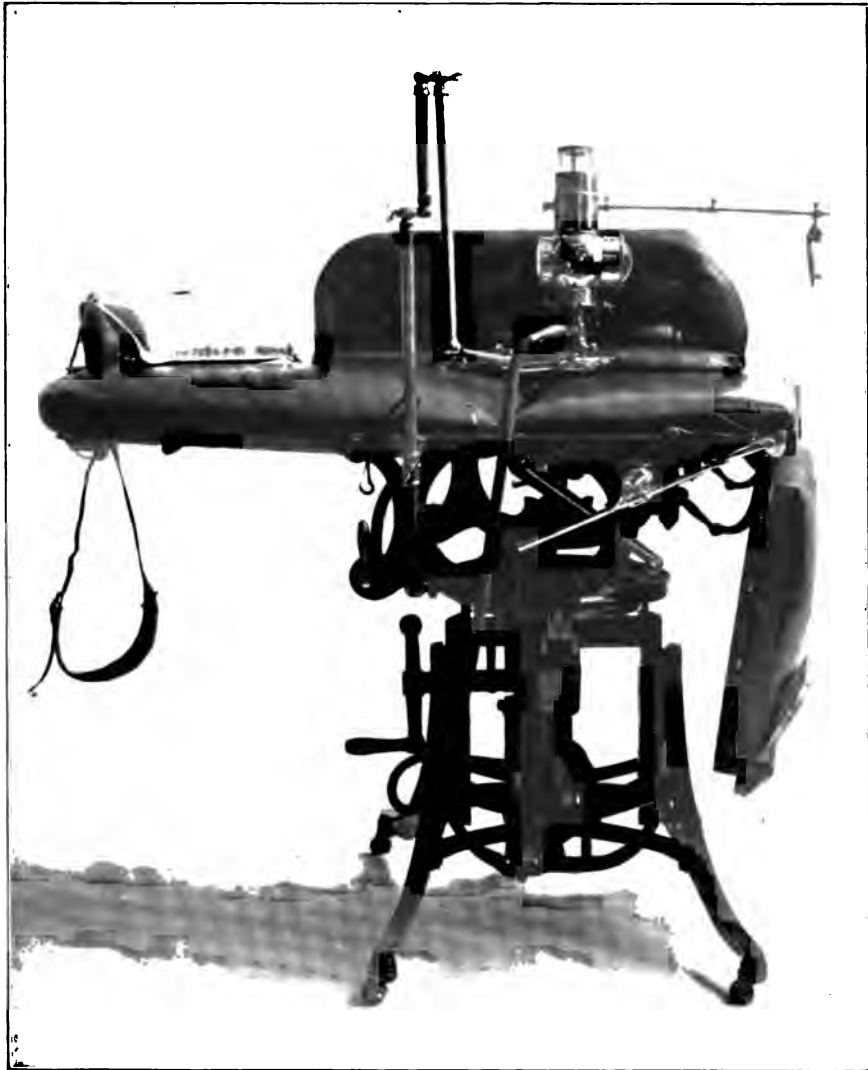
FIG. 1.



The chair for the proctoscopy posture. Adjustable illumination-apparatus. Small pillow and shoulder-strap. Position for first step in the procedure.

contributes to the instrument's usefulness as a means for irrigation, providing in the one case a self-retaining direct-flow irrigator and in the other case, when locked in the position shown in Picture 10, an

FIG. 2.



Second position of the chair, pillow, and illumination-apparatus.

unobstructed return-flow irrigator. Platinum pins connect the centrally placed brass tube with the surface of the neck of the obturator which makes the instrument an anal electrode.

My proctoscope (Figure 5) is of the same diameter as the anoscope and is four inches (10.16 cm.) in length, which, because of the dis-

FIG. 3.



Third position of the chair, pillow, shoulder-strap, illumination-apparatus, and the operator's stool.

placeability of the pelvic floor is usually of sufficient length to reach as high as the promontory of the sacrum, except in some especial instances.

Special preliminary preparation of the patient is ordinarily not required as the usual condition of the rectum is that of emptiness. In some cases, however, it facilitates the inspection if the patient employ rectal lavage an hour before the examination.

The technique.—Step I.: The patient should be required to sit on the operating-chair with his body turned to the left facing the knee-

FIG. 4.



The short anoscope.

board. The right knee should be crossed over the left knee, the left arm should embrace the right border of the chair-back, or it may be folded at the side as for Sims' posture. The small pillow should be held in the patient's right hand and against and upon his left shoulder (Figure 11).

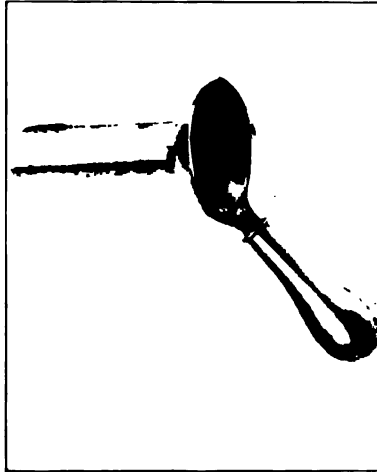
Step II, requires that the chair be changed to the horizontal position and the light fixture adjusted as shown in Figures 12 and 2. This movement brings the patient into Sims' semiprone-semiflexed posture without requiring any movement whatever on the part of the patient after he is properly seated. In this posture the external anus and fixed rectum are to be examined.

(a) Digital and ocular inspection should now be made of the anal verge, the external anus and the superficial ischio-rectal space at a moment when the patient is relaxed, and again when he is bearing down.

(b) Digital examination of the fixed or anal rectum, also, should be made preliminary to the introduction of the anoscope.

(c) The anoscope should be gently pressed into the anus in the direction of its axis till the sphincters relax to receive it. The introduction of an instrument into the rectum may be much facilitated by holding its lubricated end against the rectal sphincter and requiring

FIG. 5.



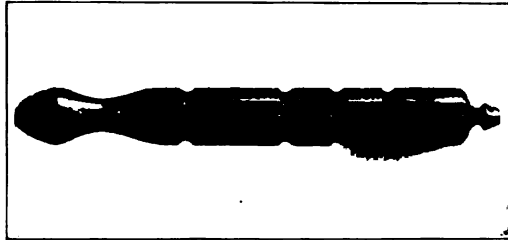
The proctoscope.

the patient to bear down; bearing down expands the rectal sphincter, relaxes the levator ani, thins the pelvic floor or shortens the fixed rectum and presses the rectal sphincter over the instrument—in other words, the patient's anus is made to climb down upon the instrument. After the introduction of the anoscope its obturator should be removed and the inspection made. The observations should be made coincident with the withdrawal of the anoscope. In instances of extremely sensitive ani hypodermic injection into the sphincters of 10 or 20 minims of one-tenth of a one-per-cent. solution of cocain will render anoscopy painless.*

* "A New Clamp Operation for Piles." Thos. Chas. Martin, M.D., AMERICAN GYNÆCOLOGICAL AND OBSTETRICAL JOURNAL, October, 1898.

A desire for precision requires that lesions of the fixed or anal rectum * should be noted as occupying a given quadrant and as situated at a given zone, *e.g.*, a circumscribed disease may be described as situated at the ental sphincter zone and in the left lateral quadrant.

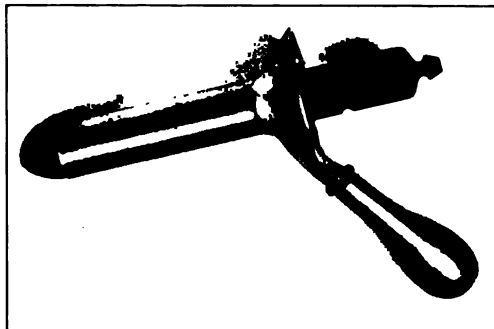
FIG. 6.



The obturator for the anoscope and proctoscope.

Step III, (a) requires that the shoulder-strap should be placed and fixed to the chair, that the knees be drawn up so that the thighs are at a right angle to the length of the chair top, and that the chair should be tilted to the extreme oblique lateral position as is shown in Figures 13 and 14. The leg-foot-board should now be lowered

FIG. 7.



The proctoscope with the obturator in position.

and the operator's stool placed in position as shown in Figure 12. The illumination-apparatus should now be adjusted as illustrated.

* "Surgical Importance of a Recognition of the Topographic Anatomy of the Rectum." Thos. Chas. Martin, M.D., *Columbus Medical Journal*, May, 1898.

In this new posture, which is equivalent to the knee-chest posture, the abdominal rectum is to be examined.

(b) Introduction of the proctoscope requires supported eversion of the buttocks and steady gentle pressure of the well-lubricated instru-

FIG. 8.



A method of putting ointment into the applicator.

ment upon the anus in the direction of the umbilicus until the sphincters are felt to yield, or the patient may be required to bear down to take the speculum. As the instrument enters the inflatable movable

FIG. 9.



Showing the position of the obturator in the proctoscope at the time the ointment is applied to the diseased area.

rectum it should be pointed toward the promontory of the sacrum and subsequently into the sacral hollow. The withdrawal of the obturator is followed by atmospheric inflation of the rectum.

(c) The operator should observe the degree of rectal distension, the situation and number of the rectal valves, their propinquity to one another when passive, and the relation of one valve to another at the time of the patient's bearing down. Under pressure of the proctoscope if possible, or the hook (Figure 15) if necessary, each valve should be effaced or displaced and in regular order each of the rectal chambers should be carefully inspected. A proctoscopic mirror may be necessary for viewing the supravulvular surfaces (Figure 16).

The examination being finished:

Step IV. : The proctoscope should be withdrawn, the illumination-apparatus fixed in the first position, the leg-foot-board lifted to its

FIG. 10.



A return-flow irrigator.

place, the lever extended, the crank turned, and the chair carried back to the horizontal and upright positions and thus the patient returned to his feet by the execution in the reverse order of the several steps described.

This method of inspection does not subject the patient to struggle or strain and need excite no embarrassment.

Observation by this method has taught me that in nearly all cases of disease at the anus there is congestion of the rectal mucous membrane presenting the usual appearances of congestion, and that not unusually a diffused proctitis attends anal disease.*

Those cases in which there is no apparent lesion at the anus, and

* "Proctocolonoscopy and Its Possibilities: by a New Method," Thos. Chas. Martin, M.D., *Mathews' Quarterly Journal of Rectal and Gastro-Intestinal Diseases*, July, 1896.

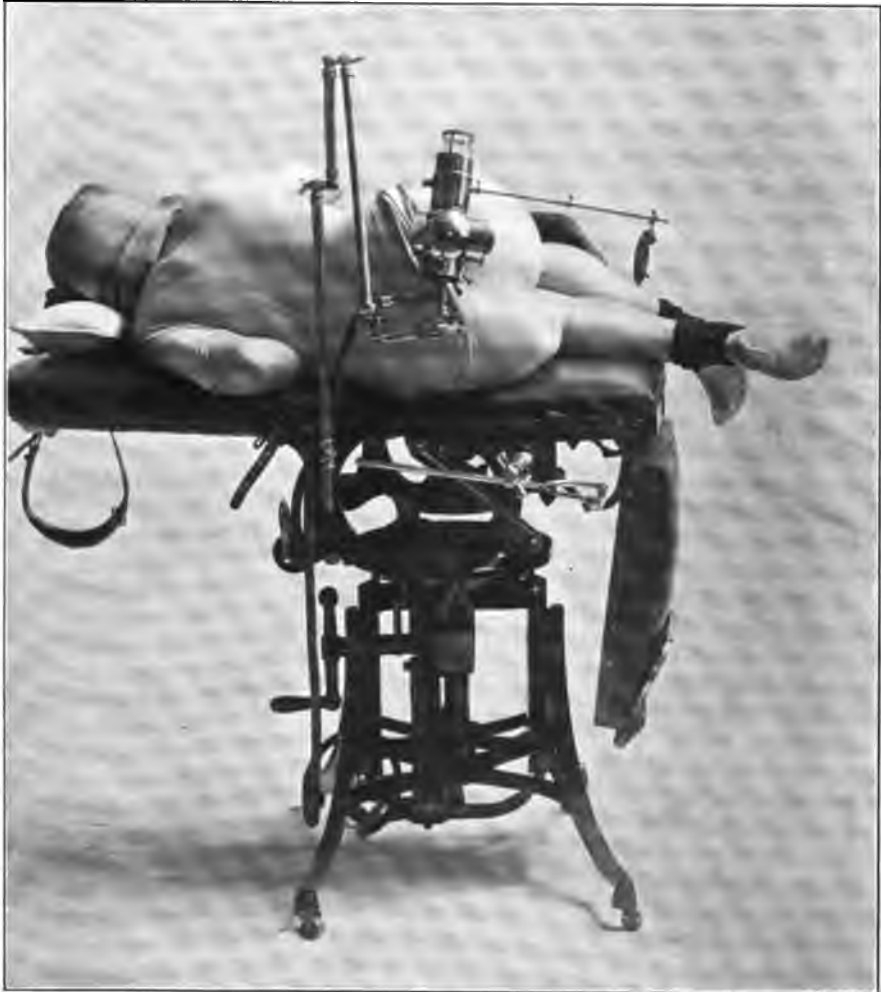
which are in a perfunctory way sometimes declared catarrh of the rectum, will at once have their real cause, such as a high-up rectal

FIG. 11.



The first position of the patient.

FIG. 12.



The second position of the patient, illumination-apparatus, etc.

polypus, congenital or organic stricture or ulceration, positively diagnosed, and will be made accessible for intelligent treatment.

New growths or ulcerations may be seen, and by means of a long-handled curette scrapings made in order that the microscopist may determine their exact character.

FIG. 13.



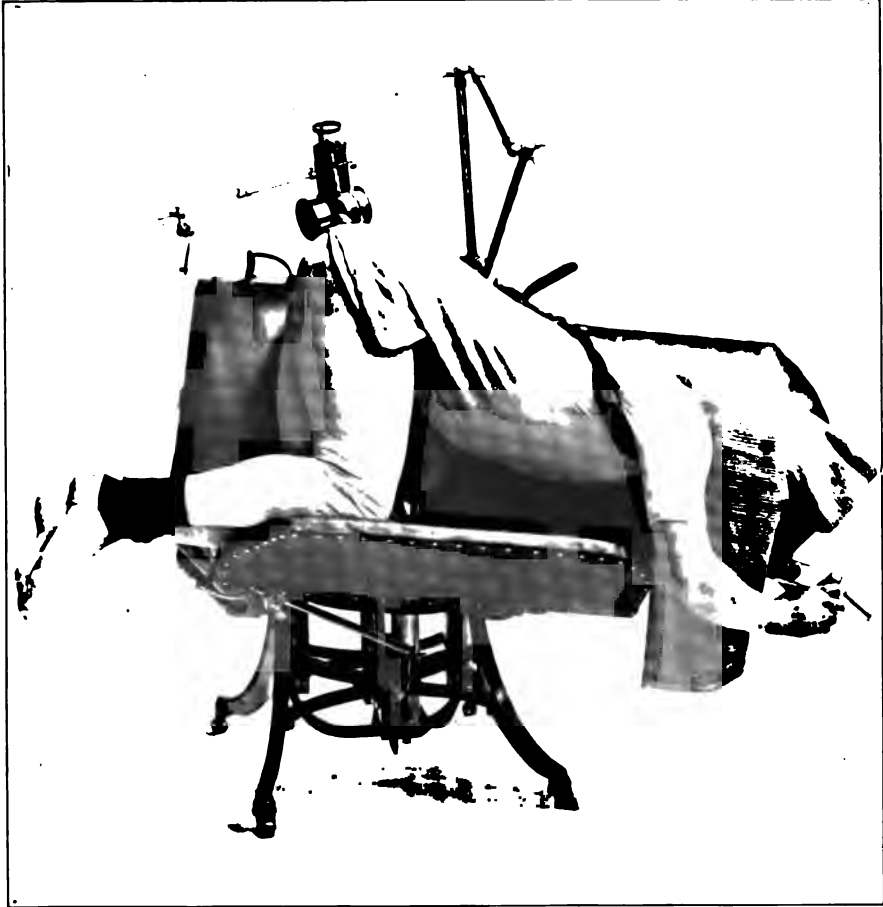
Putting the patient in third position.

Vesicorectal, vaginorectal, and other rectal fistulæ* are often apparent at a glance but in any case may be discovered by the use of the proctoscopic mirror.

Stricture of the rectum need no longer be regarded as of only

* "Cases of Proctica Illustrating the Value of the Routine Practice of Proctoscopy," Thos. Chas. Martin, M.D., *Cleveland Journal of Medicine*, November, 1898.

FIG. 14.



The third position of the patient and illumination-apparatus.

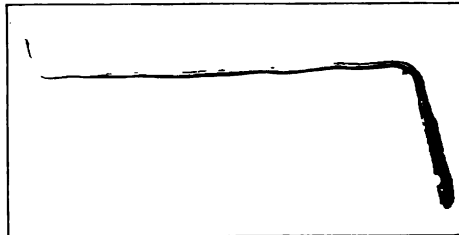
doubtful presence, and this method proves positively, even to the casual observer, how fallacious is the rectal sound as usually employed in the diagnosis of stricture.* I have repeatedly proved to professional visitors how easy it is for an entering or returning bulb-sound to be caught and held by the rectal valves and to elicit those

* "Is the Use of the Rectal Sound Scientific?" Thos. Chas. Martin, M.D., *AMERICAN GYNÆCOLOGICAL AND OBSTETRICAL JOURNAL*, August, 1898.

signs which are generally considered diagnostic of organic stricture of the rectum.

The rectal valve constitutes the chief topographic feature of the abdominal rectum. Its histologic character qualifies it the typical anatomic valve.* The attached border of each valve spans a little.

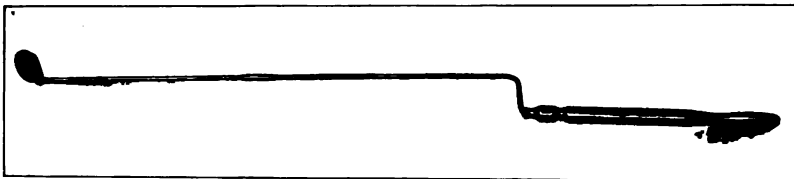
FIG. 15.



The hook designed to be used to determine the elasticity of the valves.

more than half the circumference of the rectum and its free border projects half across the diameter of the inflated rectum. Thus, what has been heretofore considered as a cavernous ampulla is seen to be divided into several chambers. There are as many chambers in the rectum as there are rectal valves. The number of rectal valves is variable. Some subjects have but two, others have four, but ninety

FIG. 16.



A proctoscopic mirror.

per cent. of persons possess three. The uppermost valve is invariably situated at the juncture of the rectum and the sigmoid flexure, and is usually situated on the left; the next is on the right wall, and the lowermost is on the left. The positions of the lower two valves are sometimes anterior and posterior. It must be readily seen that

* "Difficult Defecation in Infants," Thos. Chas. Martin, M.D., *Journal of the American Medical Association*, February, 1898.

the new methods of rectal inflation for rectal inspection will determine newer ideas of the topography of this part, and justify that the lowermost chamber be considered the first rectal chamber; the cavernous area beyond the first valve and below the second should be called the second chamber; and the upper chamber the third or perhaps fourth, according to the number of valves. The ancient arbitrary division of the rectum by the anatomists into upper first, middle second, and lower third parts should be abandoned.*

Under some conditions and amid some circumstances the rectum, unassisted, will not inflate. If the subject be extremely fat, if there be a close tubular stricture of the rectum, if there be malignant growth or other diseases of the rectum by means of which the gut's coats have become extensively filled and fixed with an organized plastic exudate, if for some reason the intra-abdominal pressure be abnormally increased, as it may be by the voluntary bearing down of the patient, as it may be by enormous intestinal flatus, or by ascites, or if there be an impinging uterus, extra-rectal growth or extensive infiltrating disease of the contiguous textures, rectal inflation by this method or by any other which is governed by the same principle may be a physical impossibility; but this need not baffle the man bent on seeing by means of additional instrumental aid.

If this method of ocular examination be practised I am convinced there need be no longer any excuse for calling an undiagnosed disease of the rectum obscure disease, and whatever the disease present this method makes it susceptible of demonstration to the patient's physician or attendant friend. There is no necessity whatsoever that the diagnosis of rectal disease be taken on faith.

The following cases are taken from my case-book:

Case I.—Six weeks ago an unmarried woman about thirty years of age was referred to me by Dr. David K. White with the suggestion that she was suffering from fistula in ano and a copious purulent discharge from the rectum. On bimanual eversion of the buttocks and ocular inspection of the ischio-rectal space I discovered the external orifice of the fistula situated in the posterior anal quadrant. Probing discovered that its depth did not exceed a half centimeter. By means of the short anoscope I determined that the fistula had no internal orifice. A half ounce of pus escaped from the rectum on the withdrawal of the obturator from the anoscope. I at once inverted my chair which placed the patient in a new posture, introduced my

* "New Evidence that the Rectal Valve is an Anatomical Fact," Thos. Chas. Martin, M.D., *Mathews' Quarterly Journal*, October, 1896.

proctoscope, withdrew the obturator and saw that the anterior concave areas of the inflated rectal chambers were submerged in pus and that the mucous surfaces of the chamber walls and rectal valves were eroded in many places. I bailed out about six ounces of pus and then observed that the rectum was abruptly obstructed opposite the sacral promontory. At this point there was a multifolded of the mucous membrane on the anterior wall, from which emerged a stream of pus on each inspiration. Placing my hand upon the abdomen I pressed backward and was able to increase the flow of pus and by several repetitions of the maneuver to see that at this situation there was an abscess discharging into the rectum. The patient was referred to me during an interval in my hospital service and was accordingly transferred by Dr. White to Dr. Humiston who operated and evacuated a considerable amount of pus from a tubo-ovarian abscess. Without proctoscopy this patient might have been considered a subject to be cut for fistula.

Case II.—The patient was referred to me by Dr. R. H. Pepper of West Virginia. He illustrates the value of proctoscopy to the abdominal surgeon. He was about thirty-two years of age, an emaciated subject, and was sent to me to be relieved of internal hæmorrhoids. Anoscopy revealed the hæmorrhoids but the proctoscopy which wonderfully ballooned the rectum exposed to view a tumor about the size of a hen's-egg situated at the junction of the sigmoid flexure and rectum. The patient was put to bed for a few days when he was again examined by me in company with Drs. Rosenwasser and Crile. To these gentlemen I reported my finding and asked them to make a bimanual examination of the patient, by means of which, I may add, we each failed to discover any confirmation of the protoscopic finding though the patient was profoundly narcotized—and he was a much emaciated subject. On proctoscopy we discovered the tumor, which rested upon a sessile base about five centimeters broad, and projected from the posterior wall to a height of three centimeters. At my request Dr. Crile removed from it a piece of tissue which proved to be that of a malignant adenoma. The patient was counselled to return to his home and on the appearance of any signs of obstruction to report again and submit himself to an operation for its relief. I am told that subsequently he visited Dr. Mathews at Louisville, and Dr. Murphy at Chicago, and, finally, Dr. Coley at New York, to whom he was sent for the toxin treatment. The growth had progressed to such a size and was so prolapsed by this time that bimanual examination was able to discover

its presence. It chanced that Dr. Crile of Cleveland was present at Dr. Coley's examination and was able to extemporize a proctoscopic examination, and at Dr. Coley's request he again removed a piece of tissue. The microscopic inspection confirmed the diagnosis which was made at a time when the patient himself did not suspect the existence of the tumor, and when expert surgeons were unable to detect its presence, though assured of its existence. Had a proctoscopy been performed when the patient first sought treatment for piles, which was perhaps a year or two before he consulted Dr. Pepper, the benign adenoma could probably have been removed by means of the snare.

Case III.—A woman aged thirty-two years, married, and childless, was referred to my clinic in January of this year by Dr. C. B. Parker. She had been under the treatment of several physicians for stricture of the rectum which the patient claimed had been many times subjected to divulsion. On bimanual eversion of the buttocks ocular inspection of the field discovered an anovaginal fistula with complete division of the transversus perinei and of the ectal sphincter ani at its anterior quadrant. Voluntary contraction of the ectal sphincter pulled the divided sphincter-ends backward so that the sphincter occupied only the posterior half of the anal circumference. Contraction of the sphincter instead of closing opened up the anus. Digital inspection discovered a stricture at the levator ani zone whose lumen was one centimeter in diameter. It was sufficiently elastic to permit the painless introduction under infiltration anæsthesia of a proctoscope two centimeters in diameter. Proctoscopy discovered a general hypertrophic proctitis with much erosion of the mucous membrane and such a degree of hypertrophy of the lowermost rectal valve as is equivalent to the so-called annular stricture of the upper rectum. Application of atomized solutions of nitrate of silver cured the proctitis within a few weeks and divulsion and instrumental massage restored the rectal valve to its normal form and elasticity, *bilateral division* of the fibers of the levator ani* and their fasciæ removed the strictures at that zone and the following procedure, which may prove of interest to gynæcologists, restored the continuity of the sphincter and reestablished fœcal continence; under infiltration anæsthesia the sphincter ends were freshened and sutured, the mucocutaneous surfaces united and *subcutane-*

* "The Surgical Importance of a Recognition of the Topographic Anatomy of the Rectum," Thos. Chas. Martin, M.D., *Columbus Medical Journal*, May, 1898.

ous oblique division of both transversus perinei was performed, the last bone of the coccyx was disarticulated from its fellow and thus the muscular structures set adrift about the sphincter which being relieved from the possibility of muscular tugging united promptly and restored the mechanism of defecation.

Case IV.—A young man, a student, eighteen years of age, tall, slender, and rather anæmic, consulted me in the summer of 1896. He reported that for eight or ten years he had daily on defecation had hæmorrhages from the rectum. Proctoscopy revealed a bleeding pedunculated tumor about the size of the Malaga grape, pendant from the roof of the second rectal chamber and situated about fifteen centimeters from the anal verge. He had no other anal or rectal lesion. Assisted by Dr. Hubert L. Spence I easily removed the polypus by means of the cold snare. The hæmorrhages disappeared and the patient grew robust within a few months.

These cases demonstrate the value of the routine practice of proctoscopy in all cases of proctica.

1077 Prospect Street.

NOTE.—Much credit is due The Canton Surgical Chair Manufacturing Company for the patience and resource which they exercised in helping me perfect the mechanism which makes this new posture so easy of achievement on their special Yale chair.

Mr. Theo. Endean made the photographs.

The instruments are made The Hartz Company, Detroit, Mich.

THE PREVENTIVE TREATMENT OF CHILDREN PREDISPOSED TO PULMONARY TUBERCULOSIS.

BY JOHN A. ROBISON, A.M., M.D., CHICAGO,

Assistant Professor of Medicine, Rush Medical College, Attending Physician for Throat Diseases and Internal Medicine, Presbyterian Hospital; President Chicago Society of Internal Medicine, etc.

The child of a tuberculous parent is liable to be infected with tuberculosis at birth, but if it escapes infection there may be grafted upon it a predisposition to tubercular infection. In what this predisposition consists has not been satisfactorily explained, but observing the effect which the bacillus tuberculosis has upon nutrition it is logical to infer that the predisposition to tuberculosis consists in an inherited cell malnutrition. The tubercular habit is transmitted to the living cells of the offspring of the tuberculous parent. The essence of immunity is lacking. And the developmental power of such cells is below normal. The result is the bodies of such children are feeble, their powers of resistance to disease are lessened, and they are more liable to the infectious diseases.

In order to prevent such infection, it is the duty and province of the physician to assume the rôle of instructor and teach parents how to rear their delicate children. To prevent infection it is necessary to institute the natural cure; that is, promote all the means for procuring normal nutrition during the periods of growth. The diet, clothing, hygienic training and education of the child should be under the close supervision of the physician from the cradle to the period of adult life.

Diet.

A babe should never be suckled by a tuberculous mother but by a healthy wet-nurse, or it should be fed with some artificial food selected from the large list of excellent and sterilized foods now on the market. If given cows' milk it should be sterilized, or the cows should be tested for tuberculosis. As the babe grows the dietary should contain more fat, and as the salivary glands develop a very slight amount of starchy food should be added. Early a taste for hydrocarbons should be cultivated, so that the patient will not have a repugnance for fatty food as is commonly the case in persons who are inclined to tuberculosis. In a large experience it has been found that consumptives consume too small an amount of fat.

As the period of childhood is approached the diet should contain more carbohydrates, and the inordinate cravings of children for sweets should not be curbed too strictly. In my opinion pure candy in moderation is beneficial to growing children, if given after and not between meals.

A point of not minor importance is the giving freely of water to growing children. As a rule, children do not drink enough water daily. Water is fattening, and it is a great aid to nutrition, it dissolves the food so it can be assimilated the easier, and it dissolves



the effete material in the tissues and fluids of the body so it can be easily eliminated.

After puberty the diet should contain a greater amount of nitrogenous food proportionately than before. Nitrogen supplies muscular force, and the demands upon the muscular system increases with the increasing age of the patient and the entering an occupation of some kind. Strength rather than fat is in demand.

It may seem superfluous to remark that children are dainty eaters, and the food should be thoroughly and appetizingly cooked, cleanly served and the children taught to eat slowly, masticating the food well.

Clothing.

The subjects should be warmly and *loosely clad*. Woolen under-

garments should be worn the entire year, except during the extremely hot days. The changes in temperature should be met by changes in the outer garments. The clothing should be loose to permit of free bodily movements and unembarrassed respiration. A child with a predisposition to tuberculosis should never wear a corset, and any mother who attempts to control the outline of her child's figure by the use of the corset is laying the foundation of tubercular infection by interfering with the processes of nutrition and the development of the respiratory functions of the lungs. Thin shoes, insuffi-



cient head covering, or deficient underclothing, are stepping-stones to tuberculosis.

But on the other hand excessive swaddling of the body, or the neck and chest, should be avoided, as it tends to a susceptibility for catching cold, and sudden changes of temperature cannot be so well withstood.

Hygienic Training.

This consists in the proper attention to cleanliness of body, the avoidance of contact with persons known to have consumption, or the use of any articles of food, eating or drinking vessels, clothing or bedding which have been used by such patients.

Babies and children should early be accustomed to cool baths,

and the throat and chest should be hardened by the daily application of cold water, and the cold bath should be a part of the daily toilet. Children should not be promiscuously kissed, and their living and sleeping room should be as large, clean, and airy as possible.

Education—Physical and Mental.

It is a matter of great regret that the children in our schools are not examined by physicians and the kind and degree of exercise they should daily take prescribed, and such physical training made a



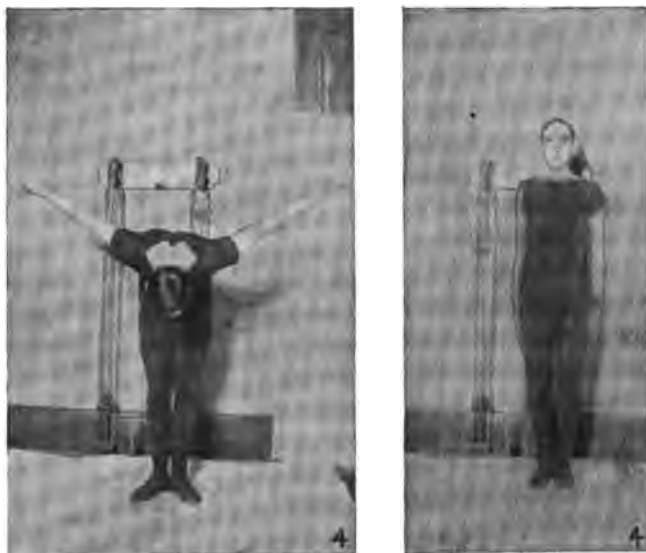
prominent feature of the curriculum. The proper ratio between the physical and mental training of each child could thus be maintained, and the child who is physically unable to stand much mental effort could have a larger amount of fresh air and exercise physically, and a sound body would be developed to be the temple of a sound mind.

But the parents could do a great deal of good at home by training their children in physical exercises. After they have reached the age of understanding the following exercises which tend to develop the lung capacity could be taught them. These exercises should be given in the open air or in a room the windows of which are open, as no one agent is so beneficial to the predisposed child as fresh air. The city child should be sent to the country as many months each year as possible.

The treatment by exercise should be general and special. The general exercise being such forms of bodily movements as develop the muscles of the whole body. Outdoor sports, such as bicycling, horseback riding, golf, handball, hunting, and so forth. Swimming, rowing, and skating not only are good for general muscular development but also for the special enlargement of the thorax.

Some authors call them *task* exercises but with the majority of patients, when they are carefully taught, and their object explained, they become *pleasure* exercises.

Exercise 1.—The correct standing position should be assumed be-



fore commencing the exercises and it consists in having the heels in line, and closed, the knees held well back, and the toes turned out at an angle of 60° . The body full to the front, straight and inclined forward so the weight will fall upon the middle of the foot and not the heels. The arms are held straight by the sides of the body, the hips a little drawn back, the chest advanced, the shoulders square, the head erect, the chin slightly drawn in, and the eyes looking forward, in position of "attention," as in military drill.

Exercise 2.—Is an exaggerated form of the position of attention with the head thrown back and resting against a support such as the wall, the arms carried backward, and taking a deep inspiration as the body is raised on the toes.



Exercise 3.—In this exercise the forearms are flexed upon the arms, the fists closed, and a certain degree of tenseness of the mus-



cles maintained. The first movement is to extend the arms and inspire deeply, and expire as the arms are returned to the first position.

Exercise 4.—In this exercise four positions are taken. First, bend forward with the arms straight almost touching the floor; second, raise the body half way to the erect position, drawing the arms extended as far back as possible; third, make the body straight and erect; fourth, drop the arms to the sides. Inspire slowly and deeply during the first three movements, expire suddenly and forcibly during the last movement.

Exercise 5.—Position of attention, arms extended in front with the thumbs clasped, raise the arms directly above the head and inspire, expire as the arms drop to the position of attention.

Exercise 6.—Place the hands upon the hips and slowly move the



arms backward as far as possible, inspiring, and expire as the arms are carried forward to the first position.

Exercise 7.—This exercise may be taken with or without apparatus. It consists of swinging the arms extended in a circle forward and backward, either alternately or together. This circle may also be made by swinging the arms extended in a lateral direction. The breathing should be free and easy, as the exercises are intended to make the movements of the chest more mobile.

Exercise 8.—Position of attention with one hand grasping a light dumbbell or the handle of a pulley-weight machine, the hand on a level with the shoulder, and the elbow flexed, the other hand rest-

ing behind the opposite hip. At the count one, step forward with the foot of the side of the body on which the arm is flexed, and extend the arm downward throwing the weight of the body on the extended foot. Reverse the exercise with the other arm.

Exercise 9.—One arm extended over the head, the other by the thigh. Alternately circle the arms extended backward and forward. Extend the arms horizontally in front and sweep backwards as far as possible.

Exercise 10.—Same as last except the circle is downward and backward.

Exercise 11.—Arms extended above head and circle forward.



Exercise 12.—Extend prone on the floor, resting the weight of the body rigidly on the toes and the hands; raise the body to the position of extended arms, inspiring during the act, and return to the first position with expiration.

Exercise 13.—Wand exercise. Hold the wand behind the neck and raise it as high as possible inspiring, and expiring as the wand is lowered. Place the wand behind the back and walk inspiring and holding the breath as long as possible.

Exercise 14.—This is a resisting exercise. The person who offers resistance stands behind the seated subject and grasps his hands as they are raised horizontal to the shoulders, the elbows flexed. The

arms extended resistance being made during the extension, and deep inspirations being taken.

In addition to these special forms of exercise the use of resistance valves, or the spirometer, playing of reed instruments, assist in gaining the object desired.

The pneumatic cabinet is useful but not adapted to the home treatment of these cases.

No child can be trained mentally judiciously who is not strong physically. How nearsighted the policy to place children of all degrees of physical strength in one room and give them the same lessons and expect about the same degree of proficiency from them.



Headache, sleeplessness, meningitis, and the host of childrens' diseases are often the result of mental overstrain. Two-thirds of the period of youth is spent in the process of education, and physicians should see that the parents and teachers give each child which has a predisposition to tuberculosis such thought and care in its mental and physical training as will insure health instead of disease. A harmonious and dual development of the mind aud body must be secured. Our school-teachers, as a rule, care more to send the parents reports of the rapid mental development of the children than to see the child is mentally developing and growing strong physically at



the same time. The paths to success lead through childhood, and the greatest endowment of this period is good health



The parent should see that the air is fresh and the ventilation in the schoolroom perfect.

Medicinal Treatment.

The preventive treatment of tuberculosis in children predisposed but not infected depends more upon the carrying out rigidly the outlines given than upon the administration of any drug. Normal nutrition is the foundation-stone, but there are some remedies which assist in restoring the normal nutrition. They are iron, the sodium salts, iodine, and its compounds the phosphates, cod-liver oil (or any assimilable oil) and the nucleins. In children these agents are often of incalculable value, and should be exhibited when indicated.

The Climatic Treatment.

If the physician will take the statistics as furnished by the census of 1890 and trace the line of march of tuberculosis through the United States, he will see that the greatest mortality from tuberculosis is in New York, then it is lowered as we trace through Pennsylvania, Ohio, Massachusetts, Illinois, Tennessee, Missouri, Kentucky, Indiana, New Jersey, etc. We soon learn that the mountainous states have the lowest record of deaths from consumption among the native born inhabitants, and that all things considered the dry climates furnish the fewest possible conditions for the existence of consumption. It is obvious that the children of tuberculous parents if removed from the home climates to dry climates will in all probability escape infection. The child of delicate physique in high altitudes increases in stature and the thorax enlarges. It would be a blessing if all children with a tuberculous tendency could be sent to the high altitudes where Nature would change malnutrition to normal nutrition, and the developmental processes would all be quickened, and the congenial soil for tuberculosis would be changed to a soil in which only those beneficent germs which assist nutrition would thrive.

FORCIBLE STRAIGHTENING OF SPINAL CURVATURES.

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The latest fad in orthopedic surgery, and perhaps in general surgery and pediatrics as well, is the immediate and forcible straightening of spinal curvatures. I refer of course to that procedure which is generally known as Calot's method. Like very many other new things we find it is not so new when we look back into the writings of the ancients. Hippocrates made use of the procedure, without anæsthetics, 500 years B. C. Galen pictures it in both the Venetian and Florentine editions of his works; and Ambrose Paré, in the Sixteenth Century, made use of this method.

Somewhat more than two years ago Dr. Calot of Berck-sur-Mer reported his first work in this direction, and to him should be accredited the revival of this operation. Since then nearly every Continental surgeon has taken a fling at the operation and has modified it to suit his fancy in the beginning and his experience later on. Some scrape out the tubercular foci in the vertebral bodies and excise those portions of healthy bone lying posteriorly to the diseased tissue, so that there may be no gap when the column has been straightened, and then wire together the spinous processes as recommended by Hadra of Galveston, Texas, in 1891. Others open and clean out abscesses and then wait for the healing of the wound and closure of the cavity before proceeding to smash the spine straight, assisted if necessary, by one or more linear osteotomies of the column. Others straighten immediately and as completely as possible, using great force and disregarding the tubercular focus, the abscess, and the gap in the column anteriorly resulting from the straightening. Others straighten gradually by many attempts and with the use of very little force.

In this country I was the first to operate, doing my first operation in June, 1897. I reported on my early work at the meeting of the Miss. Valley Med. Association at the meeting in Louisville in October, 1897. Since that time a few cases have been operated upon by Goldthwait of Boston and since March of this year (1898) by Gibney and Phelps of New York. Gibney has operated strictly after the

method of Calot, which consists in the use of only a moderate amount of force, dressing in the horizontal prone position, and a repetition of the operation if necessary. Phelps is more sanguinary in his views and believes that wiring of the spinous processes is necessary

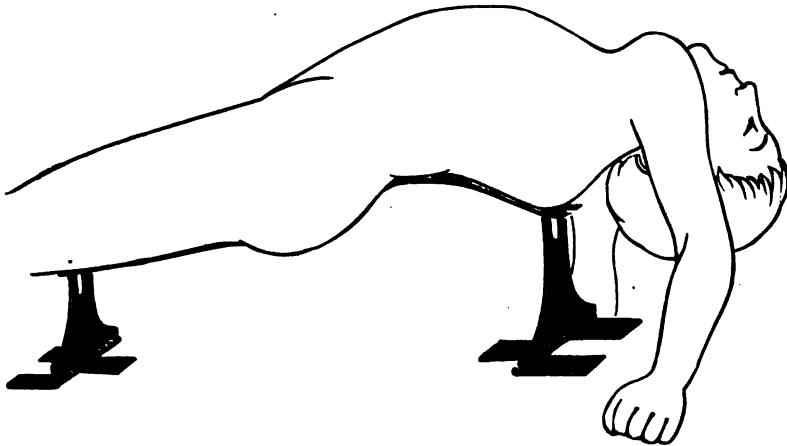
No. I.



Ridlon's Bridge, for supporting patient during application of plaster-jacket.

in all cases. Goldthwait is more conservative than any other, being satisfied with such repeated slight gains as can be had without the use of an anæsthetic except in the older and partially consolidated cases. He stretches his cases upon an oblong frame of gas-piping, to each

No. II.



Patient resting on bridge.

end of which a windlass is attached, and rests that portion of his patient's body below the kyphosis upon two parallel strips of bar-steel supported by uprights from a bridge across the frame. In this position of supine hyperextension he puts on the plaster-jacket; and afterwards pulls out the steel strips.

My personal work has been as follows: I have followed Calot in the use of only moderate force, repeated if necessary. In my early work I applied the plaster-jacket in the horizontal prone position with assistants supporting the patient; later I suspended by the feet, as recommended by Bilhaut, in all cases where it was necessary to include the head in the plaster dressing, and in all other cases horizontal traction with the pelvis and chest resting on foot-rests; still later I turned my patients over into the supine position and used some force in hyperextending the spines with the kyphosis resting upon a foot-rest; recently I have employed the horizontal supine position with the patient resting on two parallel steel strips which in turn rest upon two folding supports of sheet-steel that can be placed upon any table. (See illustrations.)

The steps in the procedure are as follows: After the spine has been straightened to the desired extent, the patient is clothed in a snugly fitting shirt of stockinet, a piece of felt, half an inch thick by four inches wide and long enough to reach well above and below the kyphosis, is placed upon the upper end of the bridge and extending somewhat beyond it; upon this the patient is laid with the angle of the kyphosis about half an inch below the ends of the parallel bars; quarter-inch pieces of felt are placed over the iliac crest and another quarter-inch piece of felt across the upper part of the sternum and neck reaching well up under the chin. Then the plaster-bandages are wrapped around the patient, including the parallel bars, in the usual way. One assistant should hold the lower extremities and make slight traction; another assistant holds the head and makes slight traction, gradually letting the head and shoulders sink lower and lower until the spine is hyperextended to the fullest possible extent. In this position the patient lies until the plaster has set; then he is lifted off the rest, the rests are removed, and the patient is turned over on his face; the weak place in the jacket where were the points of the upper rest are strengthened by the addition of another plaster-bandage laid on back and forth; the parallel bars are easily withdrawn; and the borders of the jacket are trimmed off with a sharp knife. These jackets should be changed, with or without an anæsthetic, whenever there is persistent complaint of pain or discomfort at any definite point.

Conclusions.—In all cases where the deformity is progressing, and in all cases where the duration of the disease renders it certain that consolidation is not far advanced, it is justifiable to make a reasonable attempt to correct or to reduce the deformity, provided, of course.

that the patient is not suffering from tuberculosis of the lungs or of the meninges.

All cutting operations and all attempts to completely obliterate the deformity at once by means of great force must be regarded as of doubtful utility, since such operations add at least ten per cent. to the mortality-risk.

Sinuses and unopened abscesses are no bar to the operation, provided the straightening be effected with reasonable gentleness.

Sinuses and abscesses should not be interfered with surgically unless the patient is suffering from symptoms of sepsis.

In all cases where paraplegia is present the operation is imperatively demanded. After the operation the paraplegic symptoms frequently subside at once and in almost all cases within a few hours.

If the jacket be put on with the patient resting on the bridge-support and with the spine hyperextended a repetition of forced straightening with the patient anæsthetized will rarely be necessary.

When the disease is located at or above the ninth dorsal vertebra the head must be supported; this can usually be most comfortably managed by building the jacket high under the chin while the head is bent far back and the patient resting upon the bridge.

The period of recumbency depends upon the amount of straightening accomplished, the stage of the disease, and as to whether the disease is progressive or retrogressive; it will be rarely less than three months and will often extend to eight months or more.

The question of relapse of the deformity has not yet been settled; but it is probable that there will be some return of deformity. It appears to depend wholly upon whether the patient is kept recumbent until the gap produced by the straightening has become filled with osseous material.

A cure cannot be diagnosticated until all symptoms of the disease, particularly the symptom of reflex muscular rigidity, have long been absent.

RESULTS OF THE EXTENDED OPERATION FOR CARCINOMA OF THE UTERUS *

BY EMIL RIES, M.D.,

Professor of Gynecology, Post-Graduate Medical School, Chicago.

When in March, 1895, I proposed a new method of operation for cancer of the cervix uteri (*Zeitschr. f. Geb.*, Vol. 32) which included as an essential act the removal of the lymphatics belonging to the cervix, I was fully aware of the difficulties with which such an extensive operation would have to struggle before it would come into general use.

These difficulties were the greater as they were not merely in the technique of the operation but the very foundation upon which the operation was built up, the pathological calculation was at that time insufficiently supported by generally known facts. It was doubtful whether such an operation was feasible and if it was feasible whether there was any necessity for it, and if it was feasible and necessary it was hard to say how far it must be extended. Fortunately, the attention of scientific gynæcologists and gynæcological societies of Europe and America has been attracted to this work and besides many a useless and fruitless discussion of the subject some sound research has been done supplying data unknown or insufficiently known at the time when the first paper was published. These data are partly the outcome of the operation itself. They are among the most desirable results of the operation because they in their turn will force the conviction upon the surgeons that what we have called radical operation for cancer uteri is not a radical treatment, that cancer uteri spreads like other cancers, and that a radical treatment of cancer of the uterus is a much harder task than we have been wont to believe.

In discussing this subject it will be best to assume as generally accepted all that pathological and surgical experience have taught us concerning the necessity of extirpation of uterus, tubes, and ovaries in every case of cancer of the cervix. For the gynæcologist who still believes in partial excisions or electricity or similar delusions this paper is not intended. It is rather intended to show that and why the method of hysterectomy for cancer as hitherto generally

* Thesis for the Chicago Gynæcological Society, September 16, 1898.

practised is unscientific in its theory, unsatisfactory in its results and, therefore, inferior to the extended operation.

The most important point can be expected to be scored in favor of the extended operation when sufficient time has elapsed to enable us to speak of remote results of the operation. As yet this time has not come.

The immediate results of such an extensive operation could be and were foretold as less satisfactory in the beginning than those of the vaginal hysterectomy. I find reported:

	Cases.	Recoveries.	Deaths.
Rumpf-Berlin (<i>Centrl. f. Gyn.</i> , Aug., 1895).....	1	1	
Clark-Baltimore (<i>Johns Hopkins Hosp. Bull.</i> , 1896)..	8	7	1
Kuestner-Breslau (see <i>Peiser Zeitschr. f. Geb.</i> , 1898)..	2	2	
Private communication from Boston.....	1		1
My cases.....	3	2	1
	—	—	—
Total.....	15	12	3
		— 80	— 20
		per cent.	per cent.

Freund's case operated on in 1881 (see Funke, *Zeitschr. f. Geb.*, Vol. 36), Pawlik's cases, and the case of Rumpf-Berlin do not strictly belong here, as the glands removed in these cases were distinctly enlarged, while the indication for the removal of glands in the cases strictly belonging to this operation is given by the cancer of the cervix at a time when the glands are not enlarged as yet.

This immediate mortality is astonishingly low and it appears even lower when we take into consideration the causes of the fatal results. In Clark's fatal case, death ensued a number of weeks after the operation in consequence of disease of the kidney. In my case the operation was performed when palliative treatment would have been better; about the Boston case I have only very incomplete data. On the other hand, it is very likely that a number of cases have not been reported because the results were unsatisfactory. So much at any rate may be stated: the operation if performed with all necessary preparations and precautions and if not extended beyond its proper limitations is not necessarily more dangerous than an abdominal hysterectomy without removal of glands.

The method which with slight changes has been used in my three cases is as follows:

The patient is prepared for the operation by a preliminary act which consists in thorough curettement and cauterization of the carcinomatous surface. This is done under an anæsthetic the day be-

fore the main operation and the same anæsthetic is utilized for a careful search for enlarged pelvic glands palpable through vagina, abdominal walls or especially rectum.

In the beginning of the main operation the carcinomatous surface is shut off from the field of operation by a suture of the vaginal portion if the cancer is inside the cervix or by a vaginal cuff closed over the vaginal portion, if the cancer is located on the portion.

Now everybody who has participated in this work either steps out from the rest of the operation or disinfects himself afresh. Fresh instruments, sponges, towels, etc., are used for the rest of the operation. The patient is placed in very steep Trendelenburg position. Incision from pubis to umbilicus. After the intestines have sunk back toward the diaphragm the surgeon inspects and palpates the pelvic organs and the large blood-vessels from the aorta down to Poupart's ligament and to the uterine artery. If during this examination enlarged and immovable glands are found it is advisable to cut the operation short and to do only such palliative work as will afford as little danger to the patient's life and as much protection against hæmorrhage, discharge, and pain as possible. If there is no such enlargement of the glands the operation continues as follows: First the right infundibulo-pelvic ligament is ligated close to the pelvic wall, a clamp covers the broad ligament between ligature and uterus and the ligament is cut through between ligature and clamp. Now the peritonæum is incised along the common iliac vessels and the vessels are further exposed by blunt or sharp dissection. Pushing the peritonæum back toward the side, one soon reaches the ureter which crosses the common iliac vessels on or near their bifurcation. The ureter is then laid bare from the brim of the pelvis down to its point of entrance into the bladder with the aid of an incision through the peritonæum of the vesico-uterine pouch. As this is done under the constant guidance of the eye there is no danger of injuring the ureter. The blood-vessels which are cut in this procedure are ligated or temporarily provided for with clamps. The uterine artery is plainly seen in this dissection at a point where it crosses the ureter and can easily be ligated at its starting-point from the hypogastric outside the ureter and under the guidance of the eye. After the ureter is thus laid bare and uterine and ovarian vessels are secured there is remarkably little hæmorrhage from the procedure which follows now and forms the most important new step in this operation: the removal of the lymphatics with the surrounding fat and connective tissue as I have demanded it in my first paper. This is done

by blunt or sharp dissection. The area which was cleaned out in this way extended in my cases over a surface limited by the lateral edge of the external iliac vessels superiorly, the pelvic wall laterally, the bladder anteriorly, the pelvic floor inferiorly and posteriorly by the mesorectum which, however, was lifted up and freed from all accessible glands. The glands which, were removed in this way will be discussed more fully below. Bleeding vessels are ligated or when the hæmorrhage comes from the side of the uterus it is checked by clamps or simply by pulling hard on the uterus. Two edges of the peritonæum remain after the whole broad ligament and all the fat and connective tissue along the large vessels and the pelvic wall are removed.

Now if adhesions exist between uterus and rectum, these adhesions are cut as close to the rectum as possible, because such adhesions sometimes form the path along which carcinoma spreads.

Then the procedure as done on the right side is repeated on the left side, special attention being necessary here in order to empty the mesorectum as completely as possible without injuring too much of the hæmorrhoidal vessels. The ureter and uterine artery are treated in the same way and the removal of fat and connective tissue with the lymphatics is performed to the same extent as on the other side. Again the peritonæum is left open, hæmorrhage stopped by ligation of the blood-vessels. Small arteries supplying the lymphatic glands have repeatedly given rise to some hæmorrhage and were easily secured by ligatures. The round ligaments are severed close to the anterior abdominal wall.

Now the peritonæum of the cul-de-sac is incised close to the rectum and the vagina is perforated here either against the finger of an assistant or against gauze introduced into the vagina. The vagina is severed after its walls have been secured by ligatures. The uterus is in this way freed all around and is removed.

We have now to deal with a wound which can be closed toward the peritonæal cavity by suturing the peritonæal edges left in removing the broad ligaments and the uterus. This suture runs across the bottom of the pelvis in a transverse direction uniting laterally the edges of the peritonæum of the vesico-uterine and recto-uterine pouches and in the median line peritonæum of bladder and rectum. Before this part of the operation the space between peritonæum and cut edges of the vagina is filled with iodoform-gauze if there is any oozing or if everything is perfectly dry, the cut edges of vagina and

peritonæum can be united so that vagina and peritonæum are both closed and no dead space is left between them.

Now closure of the abdominal wound follows. The patients receive the same after-treatment as other laparotomy patients and may get up as early as any of them. One of my patients, for instance, rode home on a street-car on the fourteenth day after the operation without bad results.

None of the cases which I operated on were uncomplicated. In all of them pyo- or hydro-salpinx and the concomitant adhesive peritonitis made the operation a little more difficult than it would have been without these. Besides adenomyoma of both uterine horns was observed in the first and third case.

Case I.—Operated on March 31, 1897; lives in Michigan. Patient left the hospital twenty days after the operation. The recovery was smooth with the exception of a small stitch-abscess in the abdominal wound which caused a rise of temperature for a couple of days. She writes to me from time to time. According to her last news, a year after the operation, she has gained 48 pounds and is perfectly well.

Case II.—Operated on April 19, 1897, left the hospital two weeks after the operation. I have examined her recently and have found no trace of a recurrence.

Case III.—Operated on January 10, 1898; died a few hours after the operation which was performed against the advice which I had expressed in my first paper. The case was one of a very small cancer of the cervix with very extensive infiltration of pelvic glands, an infiltration which had passed beyond the nearest glands and had formed large glandular tumors firmly adherent to the large vessels. To undertake the removal of lymphatics under such conditions was against the indications laid down in the first paper. But then here was a young woman of 35 years, doomed to a certain death if I did not succeed in removing the involved lymphatics. So I undertook the task, removed the glands which were adherent to the blood-vessels, but I had to contend with hæmorrhage from a rent in the left external iliac vein which was secured by suture of the vein and from the right hypogastric artery which was ligated. What was worse than all this was the fact that at last after all these efforts I had to desist because I found that the glands were involved to such an extent that if I had insisted on removing all lymphatics involved I should have had to dissect out the crural vein downward and the aorta abdominalis upward. As it was the patient, who was addicted to morphine, had lost too much blood and did not recover. The case itself, how-

ever, is of such enormous practical importance that I cannot regret to have operated. It gives incontrovertible evidence of the mode of spreading of carcinoma of the cervix; it explains the causes of our hitherto unsatisfactory results, and it shows plainly how little radical a vaginal hysterectomy for cancer can be.

This case is likely to have convinced everybody present that it will be well not to go beyond the limit expressed in the first paper. Where enlarged glands have become adherent to the large blood-vessels it is better not to attempt a radical operation. But where the conditions are not so unfavorable the radical operation does not present any extraordinary degree of danger, certainly not so much that it should prevent the use of the method as the routine method of operation for carcinoma of the cervix.

The first paper concerning this method stated very distinctly that the improvement of the prognosis of carcinoma of the cervix which this method was expected to bring about was only in the greater safety from recurrence, but the method was not to be applied to cases considered inoperable by any other method. It was therewith said that the method was to be used just in those cases which hitherto had formed the most undisputed domain of vaginal hysterectomy and the field in which it had been most successful. It was expected that a method which seemed comparatively safe as to immediate recovery though unsatisfactory as to remote results was to be abandoned for a method which appeared new and strange and inordinately difficult—and all this only for the sake of some possible improvement of results in the distant future. Was it really necessary to make the exchange?

The answer to this very justifiable skepticism has been given with the aid of the extensive operation better than by any post-mortem evidence which had been collected before this advance of surgery. And the answer is as follows: The extensive operation is harder work, but vaginal hysterectomy as a radical operation for cancer of the cervix must be and is a failure and a delusion. The lymphatics removed in the extensive operation prove this beyond any doubt on microscopic examination.

In 1863 Winter (*Zeitschr f. Geb.*, Vol. 27) concluded from post-mortem statistics of Wagner, Blau, Dybowski and himself and from clinical experience that uterine cancer does not involve the glands until after the broad ligaments have been invaded. He estimates the frequency of infection of the glands generally at from 20 to 30 per cent. of the cases. These statistics are not reliable for the very

simple reason that they are not based on any microscopical investigation of the glands concerned. A recent paper by Peiser (*Zeitschr. f. Geb.*, Vol. 39) bases its statistics partly on the same authorities as Winter and considers also the work of Dittrich, Cruveilhier, Pawlik and Russell and arrives at the conclusion that the pelvic glands are involved in more than fifty per cent. of the cases of cancer of the neck of the uterus.

Now even fifty per cent. is too large a number to be left out of consideration in the choice of a method of operation. But it will be found that fifty per cent. is not yet the full percentage, It must be remembered that glands can be involved and not give any macroscopic evidence of this fact and that so far no systematic microscopic investigation of the lymphatics concerned in cancer of the cervix has been published. Hitherto the only way of getting these glands for examination was to remove them in post-mortem examinations of patients who had died a short time after the operation. Winter reports a series of 44 such cases, but the microscopic examination was apparently not made, at any rate it is not reported.

The extended operation now gives us an opportunity for such investigations and it is a matter of the highest importance for this entire question not to omit this investigation. The cases reported here to-night have been subjected to careful microscopical investigation and in the two cases of cancer of the cervix the glands were found to contain carcinomatous nests in great numbers. In the first case the glands did not appear enlarged, not even when they were laid bare during their removal, but under the microscope they showed very plainly numerous carcinomatous nests. Besides they contained columnar epithelial ducts, that is ducts of a nature different from that of the primary carcinoma which was a squamous epithelium carcinoma. These masses were something quite unlooked for and appeared unexplained until the examination of both tubal horns and the left sacro-uterine ligament revealed identical masses there. In a report of the first two cases published last year (*Zeitschr. f. Geb.*, Vol. 37) the conclusion was therefore arrived at that all three of these abnormal columnar epithelium masses were to be derived from remnants of the Wolffian body.

The second case was a carcinoma of the body where the glands were removed because it was impossible to say beforehand how far the carcinoma reached down into the cervix. On microscopic examination the cervix proved to be free and so were the iliac glands as was to be expected.

In Case III. some of the glands appeared of about normal size, others, however, were very distinctly enlarged, one to the size of a pigeon's egg. The number of glands removed in this case was about eighteen and every one of them, whether macroscopically enlarged or not, was full of carcinomatous strings, the glandular carcinoma in some, especially the larger ones, reproducing the picture of the original carcinoma even to the central softening of the individual cancer strings. The smaller ones mostly showed the solid nests or rather network of carcinoma. It is worth mentioning that in this case also both uterine horns were the seats of adenomyoma, but that none of the cancerous lymphatics examined showed any columnar epithelial masses like those in the glands of the first case.

The result which this examination of glands sets forth must be a surprise to every surgeon who has been wont to believe that the formation of metastases is different in carcinoma of the cervix from every other carcinoma. In strong opposition to the old dogma now facts are staring us in the face which prove conclusively that carcinoma of the cervix far from being slow in forming glandular metastases is very apt to be associated with secondary cancer in the lymphatics at a time when the primary carcinoma is limited to a very small area of the cervix, an area so small that the case in the light of the experience generally accepted as trustworthy could appear perfectly amenable to vaginal hysterectomy.

It might be objected that the number of cases observed is too small to allow of generalization. The answer to this objection must be that the statistics collected at post-mortems corroborate the suspicion of the great frequency of secondary glandular carcinoma. It is very much to be regretted that a number of cases operated on by other gynæcologists were published without any report of the histological examination. Furthermore, from the practical standpoint, considerable stress must be laid on the very important fact that as soon as the likelihood of frequent glandular metastasis is firmly established it is our peremptory duty to take these glands into account whether they are invariably and always affected or not.

Another objection might be raised from the clinical side. It might be said that it is possible to palpate those glands and to feel an enlargement if it is present. This seems to stand to reason and yet it is nothing but a fallacy. Glands which are of normal size and which cannot be felt even in a thin woman, be it through the abdominal walls or through the rectum, can be infiltrated throughout with carcinoma and, on the other hand, enlarged glands like the one in

Case III. may be located at points where no ever so delicate sense of touch can reach them. This large gland of Case III. was located underneath the right external iliac artery and vein and if the vessels had not been laid bare in the course of the operation the presence of the gland would have remained unsuspected.

To conclude this discussion of the necessity of the operation every surgeon ought to be impressed with the conviction that on account of the frequent invasion of the lymphatics at a time when the primary carcinoma of the cervix is quite small nothing short of the removal of the lymphatics will afford the slightest degree of security against recurrence, in other words the extirpation of the lymphatics along with uterus, tubes, ovaries, and ligaments is an absolutely necessary step of any operation for cancer of the cervix which aspires to the presumptuous title of a "radical operation."

Even though all the lymphatics within reach be removed, cases will be observed which are not radically cured by the extirpation of the pelvic lymphatics. In the operation for carcinoma of the cervix the surgeon is always hampered by the proximity of organs which are too important to be extirpated or even resected without very forcible reasons and the distance between the cancer and these organs, bladder and rectum, is very often so small that a local recurrence is to be dreaded even though recurrence in the pelvic glands may have been prevented by their extirpation. Another organ which was an obstacle to the extension of the operation in a lateral direction, the ureter, can now successfully be withdrawn from the field of operation if it is dissected out and held aside as described above.

Aside from the danger of local recurrence in the walls of bladder or rectum the surgeon meets with another difficulty if it has to be decided how far the extirpation of the lymphatics has to be extended. In the part of the body with which our special work is concerned the difficulties of extensive removal of lymphatics are far greater than for instance, in the axilla in cancer of the breast. To go far above the bifurcation of the aorta abdominalis in an effort to secure the lumbar lymphatics would be an undertaking, the danger and uncertainty of which is out of proportion with the result attainable. Possible that even here an improved technique may produce unexpected progress.

If, however, we limit ourselves to the pelvic lymphatics in order not to make the operation too long and the injuries too extensive we have to consider which laws obtain in the invasion of the lymphatics

in order to know to which extent we have to dissect out the blood-vessels and lymphatics.

In the operations reported here the lymphatics along the internal iliac vessels and between these and the external iliac vessels and from the mesorectum were removed in the first and second case, while in the third case in addition to the glands mentioned those along and around the external iliac vessels down to Poupart's ligament were extirpated. These latter glands were very plainly enlarged and the question arose whether they have to be taken into account in every case or not. As far as this experience in surgical pathology can be generalized these glands have to be paid attention to through they are not the glands closest to the cervix and though they are not apt to be infected first of all pelvic glands.

At the time when the first paper was published there existed no surgical experience in this field and the anatomical researches gave the information that the glands along the internal iliac vessels are the nearest to the uterus therefore most likely to be infected. Poirier's work on about 300 female pelvis came to this result. A recent paper by Peiser (*Zeitschr. f. Geb.*, Vol. 39) gives a report of very careful investigations based on successful injection of the pelvic lymphatics through the cervix in 17 cases, 12 new-born or very young girls and 5 adults. As this paper is of great importance with regard to the extension of the carcinoma operation a short review of Peiser's results follows here:

Peiser found that certain glands can be injected with greater or lesser regularity. He uses the following terms for the lymphatic plexus following herein Cruveilhier:

1. External iliac glands laterally from the external iliac vessels.
2. Hypogastric glands in the space between external iliac and hypogastric vessels.
3. Lateral sacral glands on the lateral parts of the anterior surface of the sacrum (the medial sacral glands belonging to the rectum are located in the mesorectum).
4. Lumbar glands located along common iliac vessels and aorta and inferior vena cava the bifurcation of the aorta marking the border between inferior and superior lumbar glands.

The glands which receive most frequently the lymphatics of the cervix are those between the external and internal iliac vessels which Poirier terms internal iliac and Peiser hypogastric glands. These glands form the first station on the lymphatic road from the cervix. Less frequently the lateral sacral glands are direct recipients of the

cervical lymphatics. These glands are usually close to the hypogastric vein or even on it. This group was found in direct communication with the hypogastric glands only in two cases. The sacral glands are in communication with the lumbar glands.

In two cases Peiser observed at the lateral edge of the common iliac artery near its bifurcation an external iliac gland in direct communication with the cervix.

With these two exceptions the external iliac glands were not found in direct relation with the uterus but receive their lymph through communication with the hypogastric glands and give it off to the lumbar glands higher up.

According to Peiser, therefore, the lymphatic current from the cervix runs into the following channels: Two to four lymphatic trunks issue from the cervix. Two to three of them follow the uterine artery at the base of the broad ligament crossing the ureter, the hypogastric vessels, obturator artery and nerve and terminate in the two or three hypogastric glands. Their efferent vessels cross the external iliac vessels and go to the external iliac glands and to the inferior superior lumbar glands along the lateral edge of the common iliac artery.

Besides this system another one issues in one or two trunks from the cervix following first the broad ligaments, then turning backward takes its course in the sacro-uterine ligament to the posterior pelvic wall where it terminates in one or two sacral glands located near the bifurcation of the common iliac vessels. These send their efferent vessels to the corresponding sacral glands of the other side and to the inferior lumbar glands which on their part communicate with the superior lumbar glands where the lymph of cervix and body of the uterus come together.

The glands which Peiser calls lateral sacral glands are so close to the hypogastric vessels that they are seen and removed easily whenever the hypogastric vessels are laid bare for the removal of the internal iliac glands. It is the same with the uppermost of the external iliac glands, but the lower external iliac glands which are in direct or indirect communication with the hypogastric glands require a special extension of the peritonæal incision as was done in Case III. This part of the operation does not make the operation any harder as this portion of the vessels is free from branches and therefore easily laid bare. At least this holds good as long as the glands are not firmly adherent to these blood-vessels. If they are firmly adherent as they were in Case III. it is better not to insist on their removal

as under such conditions it is extremely probable that other glands which cannot be reached are already infiltrated.

The large gland in Case III. is remarkable for its location which was underneath the vein between the vein and pelvic wall. Of all seventeen cases of Peiser's only two presented glands underneath the veins while all other glands were either on top or alongside of the vessels. This apparently rare location of glands must however be kept in mind as the large gland of Case III. proves only too plainly.

As a conclusion of his work Peiser constructs a method of operation which with the exception of the unnecessary introduction of catheters into the ureters is practically identical with the method used in the first two cases reported here while it is less extensive than the operation done on Case III.

Peiser tries to give a wider scope to this operation than is usually accorded to the vaginal hysterectomy. He believes that cases with slight carcinomatous infiltration of the parametrium which, however, has not reached the ureter can be radically cured by this method.

If this is intended to concern cases where the carcinoma has reached the parametrium by contiguity I am strenuously opposed to such an extension of the indications. Cases where the primary cancer has become so large that it forms one mass with the broad ligaments generally are associated with extensive metastatic growths in remote organs. If Peiser means cases with metastatic tumors it may or may not be correct to follow this suggestion. The reason why such involvement of the broad ligaments is not entirely beyond the reach of a radical operation lies in the fact that sometimes we have apparent infiltration of the broad ligaments which, however, is not of malignant but of inflammatory nature. Of course inflammatory masses can be removed but that, strictly speaking, is not identical with the possibility of extending the indications for malignant growths.

These inflammatory masses are found comparatively frequently and as their differential diagnosis is practically impossible clinically they offer great difficulties to the efforts toward correct indications, difficulties to overcome which an exploratory operation is sometimes imperative.

I am not sufficiently enthusiastic to believe that the extended operation as discussed here will do away with all possibility of recurrence in apparently operable cases, but I hope to have demonstrated where one of the causes of the unsatisfactory condition of our treat-

ment of cancer of the cervix is to be found and what we can do to remedy it.

One of the greatest errors which has been committed in gynæcology has been caused by the statement that the macroscopic borderline of a cancer of the cervix practically corresponds with the actual limit of the cancerous growth. Though this statement has issued from some of the best gynæcological pathologists it is entirely wrong and the sooner we come to recognize that the better. For this erroneous statement is at the bottom of all the insufficient treatment of cancer of the uterus, chemical, electrical, surgical or otherwise.

The riddles and puzzles of carcinomatous disease are sufficiently numerous as they are. There is no need of further obscuring our work in this line by erroneous theories which seem to give to cancer of the cervix a pathological standing apart from all other cancers.

If nothing else has been achieved by the work reported here at least that much advancement has been gained that we have positive knowledge that cancer of the uterus though apparently small at its primary seat is just as apt as any other cancer to form early metastatic growths preferably in the lymphatics of the pelvis and that this fact must not be set aside in the selection of a method of operation.

100 State street.

MYOMETOMY DURING PREGNANCY: REPORT OF A
CASE WITH SUCCESSFUL REMOVAL OF ELEVEN
FIBROIDS AND AN OVARIAN CYST.*

BY ANDREW J. DOWNES, A.M., M.D.,

Gynæcologist to St. Mary's Hospital, Phila.

Gynæcology with its advance toward a scientific basis becomes more and more exact and conserving. Not long ago the reports were all of hysterectomy. How often, even five years ago, were cases of abdominal myomectomy reported? It is unquestionably true that a woman with fibroids will be much better if after their removal she retains her uterus and ovaries. Surgeons to-day recognize this fact as the increasing proportion of myomectomies performed proves. Five years from now the number of myomectomies should exceed that of hysterectomies. It is hard to conceive why, with the organs in the pelvis otherwise healthy, the uterus should be removed for subserous myomata whatever their number or wherever situated. A very much larger proportion of the interstitial variety also should be removed with as low a mortality as in hysterectomy. The foregoing applicable to the child-bearing period is the more so if the uterus is pregnant, the indications, of course, distinctly and positively calling for operation. We have here the fact that a second life is involved. A large percentage of Christians hold that the foetus in utero shares equally with the mother the right to life. Those who do not hold this view are at least bound by all laws to do everything possible to preserve this life. Indifferent judgment has here no place. The indications for deliberate foetal destruction under the conservative and scientific advancement of surgery are narrowing to very very few. As bearing on these points I have the following case of myomectomy during pregnancy to report:

Mrs. E., aged 32 years, consulted me October 4, 1898. She was married June 29, 1898. She had regularly menstruated July 28, but had missed the August and September periods and was now just about nine-weeks' pregnant. On September 1st she felt a body slip within her abdomen and for the first time noticed something hard under the abdominal wall above the symphysis. Believing she was pregnant her attention was occasionally attracted to her abdomen,

*Read before the Philadelphia Obstetrical Society, November 3, 1898.

and on September 10th she became aware of a lump larger than a hen's egg near the mid line below the navel. From this time she noticed very rapid enlargement. During the last week of September she tripped and fell on her abdomen. The following day she had severe pain, intermittent in character, the intervals being thirty to forty-five minutes. This continued for three days, lessening in severity.

My examination revealed, per abdomen, a multinodular firm growth extending by the largest node quite above the umbilicus, one fairly large lump in right flank and many others indistinctly outlined;



Eleven Fibromata—Ovarian Cyst, Foetus, and Placenta. Myomectomy during] Pregnancy. (October 12, 1898.)

per vaginam, the soft cervix was found high to the right, the balance of the true pelvis being filled with a large, firm, globular, fixed growth, the lower level of which was quite below the cervix. The only part of her previous history bearing on the case is the fact that after a course of unsuccessful treatment under other hands I had in April, '95, dilated and curetted her uterus with very marked benefit. At that time, under ether, I found endometritis in a uterus slightly enlarged and retroverted. A careful bimanual examination revealed nothing at that time indicative of a fibroid. The condition

of the patient—early pregnancy—the number of tumors, the very unusual rapidity of their growth, the filling of the pelvis with a large, firm one, its under surface below the level of the os uteri and evidently not destined to emerge from the pelvis were considered most positive indications for operation. Myomectomy was judged to be proper and practical. During the week preceding operation there was a very marked increase in the growth of the tumors, evident to the patient, her attendants, and the operator.

Operation.—October 12, 1898, at St. Joseph's Hospital. The incision extended just to the umbilicus. With some difficulty, owing to the thickness of the abdominal wall, the greater part of the mass was brought out of the wound. Projecting from its visible surface were seven fibroids, the largest one from the fundus, one quite large extending from the right; the others varying in size to the smallest, the size of a bean. From the left of the mass, visible only by tilting, grew three fairly large fibroids, making ten easily within reach. All were subserous, the largest quite so, the smaller ones dipping deeply into the uterine muscle. Beginning with the largest the capsules were carefully incised and the tumors rapidly enucleated. Before proceeding the nine incisions for the removal of these ten growths were carefully closed by continuous catgut sutures. The pelvis was now examined. The right ovary was found converted into a cyst the size of an egg. It was removed. The true pelvis was found filled with a firm fibroid growing out from the left side of the uterus at the cervix enveloped and held fixed by the left broad ligament. It had to be removed in situ. The capsule was carefully incised and the growth, after a little difficulty, enucleated and delivered. Traction on the edges of the incision from which the fibroid had been removed brought the cavity it had occupied within reach, so that after the arrest of hæmorrhage it was easily closed by a continuous catgut suture. Hæmorrhage from the incisions was controlled, to some extent, by a small number of separate ligatures, a few of them buried to actively bleeding points, but chiefly by engaging a considerable amount of muscular tissue at the sides of the incisions in the continuous catgut suture. Although the work was rapidly done owing to the amount of careful suturing required and the care necessary lest the uterine cavity be entered the abdominal contents were exposed an hour and a half. I was loath to drain but oozing was such that I deemed it best to introduce a short piece of gauze mostly as a guide to hæmorrhage. Closure was effected by thorough-and-through suture, one stitch provisional where gauze emerged.

Just before beginning the anæsthetic a hypodermic of morphia $\frac{1}{4}$ gr. and atropia $\frac{1}{100}$ gr. was given with a view of controlling uterine action. During the operation another $\frac{1}{100}$ gr. of atropia and $\frac{1}{30}$ of strychnia was administered by the anæsthetizer. Shock, while quite sever, was not alarming, the patient reacting nicely during the night. There was no indication of uterine action, yet shortly before 7 A.M. the nurse discovered fluid escaping from the vagina. Severe intermittent pain then occurred and the foetus, membrane, and placenta were expelled sharply at 7 A.M., eighteen hours after operation. Had the shock been less and the operation shorter I would have given another hypodermic of morphia during the night. It was a source of regret to me that pregnancy ended. The patient was in such excellent condition late the night of the operation that a different termination of the pregnancy was anticipated. Cases of this kind are so rare that it is difficult to say just how a case should be handled that the pregnancy may persist. It is probably good practice to give a little morphia before and some hours after operation, there being no positive contraindications. It would be better to withhold atropia. In this particular case the necessary manipulation, the closure of so many incisions, thereby interfering so much with the normal action of the uterine muscle, shock, and probably atropia were together responsible for the termination of pregnancy. I do not think the drain was a factor, it was too small and the uterus emptied before its presence could have made itself felt. Except for this result the patient did exceptionally well. The gauze drain was removed after forty-eight hours and the provisional suture tied. On the eleventh day the abdominal incision was again uncovered and the sutures removed from an aseptic wound. The patient left the hospital the twenty-fourth day after operation.

It is easy to anticipate for this patient a much better future than if hysterectomy had been performed. She has left a healthy ovary and uterus. She is free from the nervous disturbances incident to their removal. She is a normal woman. The case is another illustration of the possibilities of myomectomy. If a pregnant woman with an ovarian cyst and eleven fibroids, one of them intraligamentary and filling the pelvis, can have the conservative operation performed it would seem that fewer non-pregnant uteri should be removed on account of fibroids. Dexterity in the control of hæmorrhage, care in closure of the removal incisions, and perfect asepsis are the surgical requisites in myomectomy.

**ABDOMINAL SECTION ON A PATIENT SUFFERING
FROM EXOPHTHALMIC GOITRE. *****BY CHARLES P. NOBLE, M.D.,**

Surgeon-in-Chief, Kensington Hospital for Women, Philadelphia.

Operations upon patients suffering from exophthalmic goitre are of such rarity that all such cases should be reported. The following is the only case which has come under my own notice:

Mrs. W. consulted me in May, 1897, at which time she was suffering from proclivitas and from intense itching extending almost over the entire body, but most marked in the region of the vulva. Her age was 34. She had had four children, and no miscarriages. Mrs. W. has had good general health, and has had no trouble except from the loss of pelvic support until May, 1896. When the itching began, it was most marked over the shoulders and abdomen, but soon became universal. The itching was only relieved by scratching, which resulted in the formation of scabs. The itching was at no time preceded by any local skin lesion. Mrs. W. complained of no other symptoms. The appetite was good, the bowels regular, and she appeared to be well nourished, but stated that she had lost twenty-five pounds. Examination showed a badly torn perinæum, a prolapsed uterus, and a small mass to the left of the uterus. I was not certain whether this was a small tumor or merely a large ovary. The following September it was quite evident that the mass to the left was a tumor, as it had grown rapidly. For several reasons operation was postponed. On the 6th of October, after hanging up curtains and performing other household duties, she was taken with cramp-like pains in the abdomen, and developed mild symptoms of peritonitis. These increased instead of diminishing, giving rise to a suspicion of a twist in the pedicle of the tumor. On the 9th abdominal section was done, and the tumor removed. In the meantime her symptoms had grown worse, and at the time of operation her pulse was 150 and her temperature 102° F. A parovarian cyst about three inches in diameter, strangulated by torsion of its pedicle, was found. Mrs. W. made a good though slow recovery from the operation, with the exception that she persistently had a rapid pulse. The pulse never fell below 120.

* Read before the Philadelphia Obstetrical Society, November 3, 1898.

During the winter of 1897-8, strychnine and digitalis were administered, and everything was done from a hygienic standpoint to improve nutrition. The pulse, however, remained at 120. During this time the general health was good, and there was not much complaint from the pruritus.

Taking into consideration the nervous temperament of the patient, the history of pruritus without local lesion, and an absence of any physical changes to be made out by examination in the heart itself, it seemed to me that it was a case of rapid heart action due to nervous causes. Desiring the opinion of a medical man upon this point, I referred Mrs. W. to Dr. Daland for his opinion as to the cause of the rapid heart action, and also as to whether it was desirable to operate upon her for the cure of her proclidentia. Dr. Daland reported that the case was one of exophthalmic goitre without enlargement of the thyroid, and without exophthalmos. In his opinion the cause of the condition was the shock to the nervous system produced by the violent pain following the torsion of the pedicle of the tumor. He thought that there was no reason why an operation not too grave in character should not be done, and that not unlikely it would result in the cure of the Basedow's disease.

On the 21st of May the operation for proclidentia was performed. This consisted in curettage of the uterus, amputation of the cervix uteri, resection of the anterior vaginal wall (anterior colporrhaphy), restoration of the pelvic floor, and hysterorrhaphy. Mrs. W. made a good recovery from the operation, and is cured of the proclidentia. The pulse-rate, however, remains 120.

The presence of the Basedow's disease appeared to have no effect whatever upon the operation. There was no shock, no unusual increase in the rapidity of the pulse, and in fact in every way the patient behaved as she would have done had she been free from Basedow's disease.

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EDITORIAL.

SUBSTITUTION IN DRUGS.

Of the many evils which confront us none perhaps, outside those of our own making, is so immediate and great a detriment to the profession as this one. It affects us in so many ways, directly and indirectly. It affects the physician personally because, where it exists, it overrides his wishes, it upsets his calculations, it betrays his trust and commits forgery over his name by foisting a dangerous or inferior or useless drug on the strength of his prescription. It injures him directly with his patient upon whom such substitution is effected, by destroying confidence in his judgment and the efficacy of his treatment. For it is unreasonable to expect a patient to distinguish between the merits of drugs bearing practically the same designation or to expect such patient to understand why, if such an evil exist, and one so injurious in its consequences both to physician and patient, the profession so calmly submits to the imposition when it lies with itself to stop it. It is impossible that patients should realize how rusty and impotent professional public opinion has become through want of use.

There is another side of the question presented by this substitution of drugs which, though its immediate effect is less direct, bears no less upon the self-interest and obligation of the physician and the welfare of his patient. We refer to its effect upon the manufacturers of well-known preparations, whose merits have been tested and recognized by the profession. For several years past, in some cases for many years, a marked

tendency has been shown by the reputable and best-known drug manufacturers to appeal directly to professional verdict upon the merits of their preparations, to trust only to this endorsement for the sale of these and to confine this sale exclusively to the prescriptions of physicians. Moreover, in the pursuit of this policy manufacturers willingly reveal to the physician the principal ingredient or ingredients of their preparations, concealing at most the exact proportion of some one drug, flavoring extract or the like which makes a particular preparation distinctive. We doubt not that were these men guaranteed against substitution, they would as willingly give the profession not only an absolute formula but the methods of manufacture in detail. It is because they recognize how hopeless it has hitherto been to expect action from the profession which will eradicate this abuse, that they do not now in all cases publish their formulas so that "he who runs may read." And in this reticence, under the present conditions, they are acting not only for their own protection but for ours and that of our patients.

In all this—their direct and exclusive appeal to the profession, their refusal to sell directly to the lay public, the care and expense necessarily assumed by reason of this policy—are they not working directly in our interests? By thus acknowledging the force of professional ethics and adopting them, do not these manufacturers work most potently towards the suppression of quacks and quackery in drugs? Is not this policy a safeguard and the surest pledge of reliability in manufacture and of the purity of the drugs offered us?

It is wholly and very much to our interest, therefore, to which the spice of gratitude should not be wanting, to support the drug manufacturers in this and with a united effort to put down this evil. If the will be present and concordance of action be not wanting, the feat is not a difficult one. The abuse is actually carried on by the retail druggists—the middlemen—against whom, owing to their opportunities, the manufacturers are powerless without our co-operation. It is by corrupt appeals to the retail druggist that these *cuckoos* of the drug trade succeed in foisting their spurious articles upon both doctors and patients.

Owing to the saving of expense in soliciting and acquiring a well-earned reputation, as well as that of reliability of manufacture, the thievish substitutor can well afford to bribe the middleman where the honest manufacturer will not; thus it becomes easy to the substitutor—we apologize for the paraphrase—to feather his nest with borrowed plumage.

It is we who control or can control, and should control, the retail druggist. If we will prescribe distinctly what we want and warn our

patients to accept nothing else; if, in every case of substitution brought to our notice by our patients, we will warn the druggist of the loss of our patronage and inform the manufacturer in question of the act of substitution and of the name and address of the druggist, the evil will stop itself. This is not much trouble to take in one's own interest and it is not beyond the power of every practising physician in this country.

As in all other reforms for the benefit of the profession, however, the action of the medical press, united in sentiment and effort, is necessary for the success of this. We respectfully suggest, therefore, to our esteemed contemporaries the advisability of a general crusade on this subject, each journal working out the same idea in its own way and independently, urging upon its readers the necessity and the duty of each physician taking action to remedy this evil within the sphere of his personal influence.

What we have here said upon this subject is merely a suggestion. A volume might be written. We neither wish nor ask any credit for it but we earnestly hope that our brethren of the press will, each in turn and all together, present their ideas on this subject editorially to their readers and thus bring this matter home to every physician on this continent. If this be done, it will be the first evidence of *the medical press uniting to form public opinion*—"a consummation devoutly to be wished."

REVIEWS.

A Treatise on the Science and Practice of Midwifery. By W. S. PLAYFAIR, M.D., LL.D. Seventh American, from the ninth English, edition. Lea Brothers & Co., Philadelphia and New York, Publishers.

To but few who have studied obstetrics during the past twenty years does the treatise of Dr. Playfair need an introduction. To most of us it comes as an old friend of our student days.

Since the last edition, published in 1893, some changes have been made, in order to keep pace with the rapid advance of obstetrical science.

A great part of the text has been rewritten, and we notice that greater emphasis has been laid upon aseptic precautions and more details given for the preparation of the hands, instruments, and patients.

The most marked improvement seems to us to be in the section upon the puerperal state and especially in the chapter on "Puerperal Septic Disease."

New plates and wood-cuts elucidate the text and help the artistic effect.

The many editions and enormous sale of this work are proof of its popularity.

X. Y. Z.

Conservative Gynæcology and Electro-Therapeutics. By BETTON MASSEY, M.D. The F. A. Davis & Co., Philadelphia.

Under this title the author has rewritten, enlarged and restated his former work, "Electricity in the Diseases of Women."

If this volume should fall into the hands of one beginning the study of gynæcology his impressions, after perusing its attractive pages, would be somewhat of this kind: "What a delightful and satisfactory occupation it is to practise gynæcology with the use of electricity and how that good doctor must enjoy curing all those poor women; and how, in the face of such remarkable cures, can those blood-thirsty surgeons, dare to suggest the use of a cutting instrument for their amelioration."

It is true that the author does not claim that electricity is a cure-all, but this must be attributed to his modesty, for it would be difficult to conceive of any ailment that feminine flesh is peculiarly heir to that has not been cured by this remedy. Ovarian cysts would seem to be the exception that proves this rule.

If the same neophyte, leaving this happy field of labor and rosy atmosphere, should visit the offices of ten of our most prominent and successful gynæcologists, he would be not a little puzzled to understand the meaning of so much dusty electrical apparatus on the back shelves and in the closets of nine of these gentlemen, and he would be surprised to learn that the scalpel and scissors had not yet followed their brother, the lancet, into oblivion.

Electricity, without doubt, does relieve some menstrual derangements and neuralgic pains, and it has a place in gynæcology, but the treatment the author advises in cases of ectopic gestation, pyosalpinx, purulent salpingitis, and carcinoma, called "conservative," is a misnomer.

The book is well gotten up and the plates and cuts well executed.

M.

TRANSACTIONS OF THE CHICAGO GYNÆCOLOGICAL
SOCIETY.

Stated Meeting, September 16th, 1898.

The *President*, HENRY P. NEWMAN, M.D., in the Chair.

Results of the Extended Operation for Carcinoma Uteri.

BY EMIL RIES, M.D.

(See page 570.)

Dermoid Cyst of Both Ovaries.

Dr. T. J. WATKINS: The specimen I show you this evening is one of Dr. Frankenthal's. He asked me to present it for him as he was not able to be here. The case is interesting on account of the presence of a dermoid cyst in both ovaries. One of these is quite large, the other small. The large one was twisted so as to produce gangrene of the tumor and tube. The patient was also about four months pregnant. It is interesting to know that pregnancy is possible when a tumor exists in each ovary as in this case.

The existence of dermoid tumors in both ovaries is somewhat rare. Poupinel has collected forty-four such cases. This is Dr. Frankenthal's second case of double dermoid. The ovary with the small dermoid in it was not completely destroyed, so that Dr. Frankenthal resected a part of the ovary and sutured the wound in it with a fine continuous catgut suture. Dr. Kelly has reported two cases where there had been double dermoid tumors, and where a portion of one ovary was left. Both of the cases became pregnant within two years after date of the operation.

Abdominal versus Vaginal Section in Pelvic Surgery.

BY JOSEPH PRICE, M.D., of Philadelphia.

(See page 521.)

The Indications for Interference by Way of the Vagina in Pelvic Diseases: An Answer to Dr. Joseph Price.

BY FERNAND HENROTIN, M.D.

(See page 529.)

DISCUSSION.

DR. FRANKLIN H. MARTIN: Mr. President—Dr. Henrotin who opened this discussion has prepared a formal paper, and, therefore, I am placed at a disadvantage in following two distinguished men—the veritable Ajax of the Big Four of the Philadelphia Obstetrical Society and the hardest hitter we have at home. In discussing this subject I wish to make the point that the best all round gynæcologist is the man who, when operating, always selects the operation suitable for the particular case in hand, and not the man who raves and tears in advocating some favorite method, consequently operates one way on all cases, or the man who operates on all cases the other way. It is impossible to do good surgery by operating either through the vagina or abdomen in all cases.

The last speaker (Dr. Henrotin) refers to his last series of cases operated on. Bringing them before us as an argument for any kind of surgery is not fair. Any patient operated upon within three years should not be brought into a discussion of this kind as a proof of anything. A gynæcologist who incised the vagina of a woman a year ago may find, or some one else may find, that she has to-day a pyosalpinx. A case operated through the abdomen a year ago may have to-day complications that were not looked for, and some other surgeon may be preparing that patient for operative interference to-day.

Dr. Henrotin was particular to say “in selected cases,” but he does not tell us how to select them. He tells us that after *he* selects the cases he can make the proper diagnosis and in a certain number of them can absolutely effect a cure by incising them through the vagina. It would be better if he were to tell us how to select our cases, for we come here to learn. It seems to me that we have got to remember our anatomy, physiology and bacteriology in considering this subject. I have said that all major surgery can be best done through the abdomen, as a rule, while some minor surgery may be done best through the vagina. I do not believe that Dr. Henrotin or any other gynæcologist can incise a so-called ovarian abscess two or three weeks old and predict what is going to occur six months hence. Why? Because when we have pelvic

suppuration we have [illustrating on the blackboard] as a rule a large uterus with a distended tube passing off from each horn on either side. Below we have on either side an ovary. How does the ovary become infected? Either by the gonococcus traveling through the uterus and tube or by streptococci or staphylococci traveling through the tube or through the lymphatics in case we have a puerperal condition to deal with. The only abscess that I can conceive of which can be treated by a simple incision would be an occasional isolated abscess of the tubercular variety, which would lie in the cul-de-sac of Douglas. In such a case a cure might be effected by vaginal incision.

In chronic cases of pyosalpinx almost invariably the cause is gonorrhœa. If we have a pyosalpinx infected by streptococci or staphylococci it is of such a virulent character that the pus finds its way out through the vagina, the bladder or the rectum within a few days before we have time to differentiate and to operate. So chronic cases of pyosalpinx are almost invariably gonorrhœal in origin, with an occasional one caused by tuberculosis or, rarer still, as result of secondary infection from appendicitis. If the right ovary is infected and is in the posterior cul-de-sac low down, the infection being gonorrhœal in character, after the abscess has been incised it may be drained. Following this there *may be temporary* relief of the peritonitis which is likely to exist at that point. The patient may get better, but, at the same time, while that has been done an abscess still exists in the tube, which is ready to reinfect the peritonæum, the omentum, and bowel, and in a little while we will have an old-fashioned pyosalpinx which involves the ovary, tube, bowel, omentum and everything that is in the abdomen that can get there. The other side has not been touched. You may incise the ovary and drain the abscess into the cul-de-sac, and by so doing cure a little localized peritonitis at that point. The tube, however, is still infected. There has been leakage of the tube, and there are other cavities filled with pus. Now, you must incise not only one cavity but all of them, if you wish to be successful. In the majority of cases it may become necessary to incise six, eight or ten. Therefore, why not scoop it all out through a generous abdominal incision? It is seldom necessary to remove the uterus for double pyosalpinx. You take out the uterus where there is double pyosalpinx and open it up, and you are always ashamed to show it. Such has been the case in the few cases in which I did this. The mucous membrane will be found almost normal, and it is hard for

surgeons to explain why they remove the uterus as a routine in every case of pyosalpinx. One of the reasons why we formerly had unpleasant sequelæ following operations for pyosalpinx is this: We removed the tubes and ovaries and the broad ligaments and left the uterus standing up in the pelvis, unsupported, with the idea that it would remain in that kind of position and be comfortable to the patient. The consequences were that in almost every case it would fall backward into the cul-de-sac or into some other position, and as there were raw surfaces on the surface the parts would become adherent. In other words we did not fix the uterus in the proper place at the end of the operation. So I would say that all surgery of importance should be done through the abdomen (1), because you can see what you are doing. (2) You can do what you want, and (3) you can do it more quickly.

The cases I would reserve for the vaginal route would be those of carcinoma of the cervix of the proliferating variety—flat-cell epithelioma filling up the vagina, but which seldom extends beyond the cervix, and which seldom infects the lymphatic gland, and in which the vagina is large. In all other cases, where there is any question about cancer involving the broad ligaments I should remove the uterus from above, and if later during the operation I found that the glands were diseased, I should remove them. All cases of double pyosalpinx, large fibroids, cystomata and all cases of extra-uterine pregnancy should be removed suprapubically.

There is one other unimportant point I might mention in regard to vaginal operations. They have a cosmetic bearing. I have women come to me and ask me to do the operation by the vagina, so that there will be no scar. Other surgeons are operating through the vagina, therefore why will I not? They forget that all cases are not suitable. The objection on the part of patients to the abdominal route on account of the scar that is left is of some importance, but it is not of very great importance if it involves more desperate surgery. I believe better drainage can be effected from above than from below, and with less risk. We can drain effectively through a smaller opening suprapubically than we can drain through the vagina and do it well, because in establishing drainage above a small glass drainage-tube, with the abdominal wall closed closely around it, can be employed; while through the vagina it is almost necessary to use a bundle of gauze which does not always drain. Then, too, we are more liable to get hernia from the use of gauze than from the use of a drainage-tube.

One more point. I believe all cases of pyosalpinx can be removed through an abdominal incision without any reference to the number of complications that may exist. I know this is a dangerous statement to make, but I have made it before, and by so doing I have taught something to some one. There is an exception to every rule, but I firmly believe that all cases of pyosalpinx can be dealt with successfully suprapubically.

Dr. FERNAND HENROTIN: This incision is applicable to certain cases, and particularly to the treatment of acute ovarian abscesses. This is a condition, which, I believe, is more common than is generally supposed. Its most general causes are abortion and trauma. In my previous remarks I did not say anything about gonorrhœa, which was alluded to by Dr. Martin. It is common for me to drain in septic cases following early miscarriages, criminal abortions and surgically unclean manipulations. The incision referred to is not suitable for large pus-tubes and ovarian abscesses, and I do not pretend to cure any such cases by vaginal incision. My cases are carefully selected, and I claim from actual observation that in the more simple cases of ovarian abscess the thing to do is to open them by vaginal incision, and if we do it properly we will get good results. So the drawings made by Dr. Martin do not represent any claim I have made.

Dr. HENRY T. BYFORD: The claim that we must operate on all cases either through the abdomen or by the vagina is unreasonable. I believe that in properly selected cases we can do just as efficient work by way of the vagina as through the abdomen. There are certain pathological conditions in the bottom of the pelvis that cannot be operated upon as well from above as from below. If we make a vaginal incision in such cases we can reach the parts immediately. On the other hand, if we resort to the abdominal route we must work among the intestines or force them out of their place and thus manipulate and perhaps abrade them. If we operate upon parts high up in the pelvis, or above the pubes, of course we would not think of operating through the vagina.

It is not right to condemn the vaginal route because the results obtained are not always perfect. I believe that we get just as good results by operating through the vagina as through the abdomen. But we must carefully select the cases. I seldom remove the ovaries and tubes nowadays in their entirety; I nearly always leave a tube with an opening in it and leave at least a part of an ovary. In cases of vaginal section we can deliver the fundus, tubes or ovaries into

the vagina and resect the ovaries and tubes with but little trouble. We can enucleate small intramural or subserous fibroids, remove small ovarian tumors, suppurating tubes, etc. Dr. Price told us this afternoon at the clinic that the object is to save the patient regardless of the means of operating. If I should in any case select the vaginal in preference to the abdominal route, I do so because I feel it is safer for my patient.

Dr. JAMES H. ETHERIDGE: I have very little to say on this subject. Dr. Byford has taken the ground which I intended to cover. There is one unfortunate thing about this discussion, and that is this: It would seem by the announcement that the subject of this discussion is made to have an antagonistic appearance, and that Dr. Price and Dr. Henrotin are placed in the attitude of antagonists. I do not believe it. I believe that we have two separate things to deal with in this discussion, and that good work can be done by either method of operating, the same as we treat a disease by different methods. In a few years the result of this discussion will demonstrate what can best be done through the vagina, and vice-versa. Therefore, while I think a good deal of this discussion has been senseless in a measure, still we have had pointed out those cases in which the vaginal route is applicable, and those cases that are suitable for the abdominal method. The wisdom and experience of such men as Drs. Price and Henrotin will define the limits of those cases to be operated upon by the vagina, and those that are best adapted for the suprapubic route.

In the case of small uterine fibroids, in a roomy pelvis, I believe the vaginal route is a thousand times better than the abdominal for their removal.

One strong objection to the vaginal route and a great difficulty attending it is that we are working largely in the dark; hæmorrhage is unsatisfactory, and added to that there is danger of wounding the bowel. I have seen one case of death from this, whose cause was discovered post-mortem.

Dr. REUBEN PETERSON: Any one who has studied his abdominal cases conscientiously and has borne in mind one fact Dr. Byford has brought out so prominently, that it should be our first aim to cure our patients and not make them conform to fixed rules of operating, has seen disease in the pelvis that he dreaded to approach by the abdominal route. This did not arise from lack of experience, for all our work for a good many years was accomplished entirely through the abdomen. Still, where we had to deal

with large pus-sacs, deep down in the pelvis, united to the surrounding organs by dense adhesions, and in women weakened by septic abortion we made the abdominal incision with considerable dread, because a certain number of cases did not survive the operation. I agree with Dr. Henrotin that a fatal result is more apt to follow the removal of pus-sacs from puerperal cases when the abdominal route is employed. The same is true of infected ovarian cysts. We are dealing here with a virulent infection entirely differing from sterile pus-tubes and no matter how carefully we may have walled off the abdominal cavity the peritonæum is liable to be contaminated by the pus, and if so, death almost invariably follows. For this reason, if we have the welfare of the patient at heart and the abscess lies deep down in the pelvis, so as to be opened by vaginal incision without rupture into the peritonæal cavity, we would better pursue this method.

Dr. Price has given us some excellent ideas in regard to dealing with these cases through the abdomen. In fact, Dr. Price was one of my first teachers through his published writings. In 1890, when I began my work, he taught that it was a crime to deal with these pus-sacs in any other way than removal through the abdomen. A few years ago I met with a case that made me consider very carefully whether I was really doing the best for my patients by always operating through the abdomen. This patient had a collection of pus on the right side of the pelvis with fluctuation in the posterior cul-de-sac. She had a pulse of 160, and I was afraid if I opened the abdomen she would not survive the operation. I therefore made an incision in the cul-de-sac and let out about a pint of pus, and she pulled through. I told her father, who was an intelligent physician, that I should have to remove the appendages later because in all probability there were multiple pockets of pus, and the appendages were so diseased that she would be a chronic invalid if allowed to go unoperated upon. This case did not turn out as I had predicted, and the patient got well without further operation. I examined her carefully a year afterward and there was no sign of pelvic disease where there had been abscess and diseased appendages before. While this one case did not convince me that a certain class of cases should be attacked through the vagina, it led my thoughts in that direction, and I began to study my cases carefully, and found that acute cases of deep seated pelvic abscess, whether contained within the tube or ovary or both, could be more safely operated upon by vaginal incision than by the suprapubic method.

I do not think Dr. Martin is correct in saying that a patient cannot recover from a large abscess-formation like the cases under discussion, except they be radically removed, because I have found they can in certain instances, and we should certainly give them a chance. I make it a rule—if we can make rules in abdominal and pelvic surgery—that where a woman has repeated attacks of pelvic peritonitis, showing that there is considerable disease of the appendages, to operate through the abdomen, because usually under these conditions there is more than one pus-pocket. If the case is acute, and we have a large amount of pus low down in the pelvis, then I would operate by the vagina and drain thoroughly. It is wrong, it seems to me, for Dr. Price to intimate that the older men did this work better than the men of the present day. Formerly a small opening through the cul-de-sac was made and a rubber drainage-tube inserted through this small opening. The technique has entirely changed. The incision in the cul-de-sac is the entire width of the vagina; the fingers of the operator are introduced through it, and the abscess-sacs are separated and drained, making of it an entirely different procedure. I agree with Dr. Etheridge that these operations should not be considered antagonistic to each other. Each has its field of usefulness, and it remains for us to determine under what conditions each should be employed.

Dr. PRICE (closing the discussion): It is interesting to take part in a discussion of this character, but it covers so much territory that it is difficult for the few men who are particularly interested to define their positions carefully. It seems to me the profession entertains the idea that I have absolutely rejected the vaginal operation. This is a great error. I question very much whether there are many men in this country who have done more vaginal hysterectomies than myself. I did them for a long series of years. At one of the meetings of the Gynæcological Society in Philadelphia Emmet sat to my left and witnessed a vaginal hysterectomy for malignant disease, with complications above, diseased appendages, etc., and it is an error for the profession to get the impression that I have abandoned the vaginal route.

To return to the discussion. One gentleman, who has just taken his seat, alluded to my work and teaching with reference to vaginal incisions and punctures. He is slightly in error in regard to the criticism I made this afternoon at my clinic. I do not think in this discussion we should allude to the practices of our fathers or to the ancient practice of puncturing or of making vaginal incisions. I

said at the clinic this afternoon that this was ancient treatment and was practiced by Hippocrates, B.C. 410. I also remarked that the incisions made by some of our early practitioners were better and more effective than the treatment carried out to-day by some surgeons. I want to call attention to the practice of one of the most skillful gynecologists in this country—Dr. Kelly,—who punctures with scissors and withdraws the pus. This practice is published and goes all over the country. The same is true of even the introduction of the uterine dilator and stretching the incision. That was not the practice of our forefathers or fathers. They made a good, old-fashioned cut, and I insist I was right in that statement. There is no one in this country who occupies a more conspicuous and prominent place in gynecological work than Dr. Kelly. There is scarcely anything that he has not taken up and tried. It is true, some of the ancient operators made freer incisions. They delayed operative interference, in that they waited for fluctuation or pointing. Some of them waited until one groin got green, and one of the common practices was to lay a piece of caustic on and burn a hole through. Those were frequent practices in the days of our forefathers. They relieved patients.

Let me express myself clearly in regard to the relief which comes from incision and drainage. Dr. Henrotin, Dr. Ferguson, or Dr. Martin can each take one hundred consecutive cases in their hospitals of operation for pelvic suppuration, be what they may, single or multiple, incise one or two or three abscesses carefully, and with a careful toilet, irrigate and drain them, and these three hundred patients will in all probability be greatly relieved. Symptomatically they are cured, and they get them out of the hospital in eight or ten days feeling much better, thanking them and the nurses and rejoicing that they have been their patients and inmates of their hospitals. These three hundred patients will go forth sounding their praises. I beg of you, when you consider such results, to contrast them with the recent one hundred cases reported by Dr. Kelly, of vaginal incision, or puncture, dilatation and drainage. Let us analyze the first thirty-five or thirty-seven cases that were reported. Three of the number returned, and one died out of the thirty-seven. This is a contradiction to the three hundred cases I gave you because I have given Chicago the credit for a *nil* mortality. In this series of cases I have said that three of them returned for a third puncture, two for a second, and several to have the suprapubic or the complete method of removal performed.

Take patients with multiple abscesses, suppurating tubes and ovaries, with general adhesions, and after you have purged them, unloaded their alimentary canals, they feel much better. Take a group of one hundred patients, purge them by the administration of calomel, and on the third or fourth day a large number of them will refuse operative interference, for the reason that they feel much better. Their bowels have been unloaded and there is nothing to make pressure upon the sensitive structure. At one time we made it a rule in the dispensary service to give patients salines, and after these women had had six to twelve bowel movements, say to-night or to-morrow, they would refuse to go into the hospital to be operated upon. We soon discovered that this was bad practice and ceased administering salines.

It is true, patients are symptomatically very much relieved by vaginal puncture and drainage. From what Dr. Henrotin has said, some of you may imagine that I do not do the vaginal operation very frequently. I wish to say that I have done many of them, and let me remark right here, that if I can dismiss everything from above; if I begin with the understanding that the case is a comparatively simple one; that there are no adherent, fixed, thickened, disorganized omentum and other structures attached to the suppurating tubes and ovaries; if several inches of ileum are not adherent in the pelvis and overlying the diseased appendages; if there is no fixed sigmoid to the suppurating tube and ovary on the left, I would do nothing but vaginal hysterectomies. I would resort to vaginal hysterectomy every time, whether a woman has borne a child, or whether she is fat or lean. I consider vaginal hysterectomy one of the easiest operations in surgery, and a great many operators practise it because it is easy. This operation, as many of us do it in this country, is done with four forceps—two good sized ones and two little ones. Let me remark in this connection before I forget it, that if there are any men in this world who thoroughly understand this operation, they are Jacobs and Segond, and I had no thought whatever of criticising the work or statistics of either of those men. Nor would I pick out the most difficult cases for these men to operate on, were they to operate for me. I would be ashamed to give them dying patients for operative purposes, where it would only take a feather to depress the beam. Do not understand me to criticise the work or contributions of Jacobs or Segond. They are worthy of careful study, and any man interested in vaginal hysterectomy can do no better than to carefully study the work of these men. I have done vaginal hysterectomies for

malignant diseases right along, and let me say that the criticism made of the method is scarcely fair. I am satisfied that very few operators will practise the theoretical procedures now recorded, such as the complete removal of the broad ligaments and glands, etc. Those are operations which, in advanced cases, cause loss of life and are rarely successful, I have repeatedly found incipient malignant disease of the breast so extensive as to require the removal of a large portion of the side of the chest. I have gone up into the neck and under the clavicle and removed all glands. I have laid bare the axillary vessels until they have presented the appearance of a gridiron, and in one case I removed the pectorals of a woman so that she has not been able to comb her hair since. Malignancy is malignancy the world over, and it is my belief that very few, if any, such cases are absolutely cured. There are such cases on record, but I am led to believe that they were errors made in diagnosis. I remember very well removing both breasts of a woman, leaving but a little island of skin. I made a very extensive dissection, and although I had gone beyond the glands outside of her chest and she lived for eleven years without recurrence, a year ago I got on a train and met a physician who told me that he had recently operated on an old patient of mine. He said it was the patient for whom I removed both breasts, and he added, "I removed her uterus for malignant disease." I have repeatedly removed breasts for malignant disease and recurrence would take place in two or three years. I remember removing both breasts of a woman in Trenton, who for two years thereafter was happy, there being no evidence of return of the disease, but two years later there was a return in her transverse colon.

A word or two more about the vaginal route. If we have a small fibroid of the uterus, say as large as an egg or a small potato, the vaginal route is a simple procedure. On the other hand, if you have a case where there is retention of blood or pus, or water, hæmatosalpinx or pyosalpinx, you always have fixation; and if you have tubal occlusion with retention and ovarian abscess with bowel adhesions, I should much prefer the abdominal route in treating such a case. In many instances ovarian abscesses are due to pavilion infection, or to occlusion at the pavilion attachment of a suppurating tube. Ovarian abscesses are not as common in my practice as they are in that of Dr. Henrotin. What he said in regard to treatment of ovarian abscess is true. Most of you have incised ovarian abscesses and the patients have gotten well quickly, but not in all cases. I have known some very distressing cases of ovarian abscess. I recall a case of ovarian

abscess in which the abscess was incised twice. The young woman became more and more septic until she was a mere skeleton. It was thought she would die. After the abscess had refilled a second time everything was found fixed on the right side and it was a question whether there was puriform accumulation there. It was decided to have her brought to Philadelphia. At the operation I found the old ovarian abscess, and the old cheesy, disorganized stack had a couple of scars in it, the abscess being attached to the vaginal vault above and beneath the ligaments. There had been some leakage, and there were some sinuses and disorganization. In separating the broad ligament between the tubes I could pass my finger above and below the tube down to the ovarian abscess. I enucleated both tube and ovary, curetted the old, cheesy, disorganized sinuses, evacuated a pus-pocket, and she made a speedy recovery.

Some one has alluded to the open treatment. It is difficult to make the profession understand what we mean by the word open. The open treatment for a dying patient! In these cases we have a suppurative peritonitis, a condition in which the whole peritonæal cavity is dead, dirty, filled with pus or muddy fluid and lymph. It is an infectious peritonitis, whether it be due to typhoid perforation or an acute virulent appendicitis with general peritonitis. If you can arrest sepsis in such cases you can save life. If you cannot do so, your infection causes death. I have sometimes felt that I would like to have some convenient form of coil that I could irrigate and cleanse and keep the whole peritonæal cavity clean, but since we have nothing of that kind, I am in the habit of freeing the omentum and breaking up adhesions and washing the bowels out with pitchers of water, placing a drain from one kidney to the other in the groins and pelvis and putting in a gauze cofferdam. I will allude here to four patients that I operated upon last summer, where I could show you for a week either the small or large bowel exposed. Of course this is an incomplete procedure, which I dread. My aim is to save life, even if I cannot do ideal surgery while I am struggling to save patients. If a woman has a hernia as big as my hand, she can return some time, after this incomplete procedure, and it will be a simple matter to close the abdominal wall. I can split up the sheath of both recti muscles, free the adherent omentum and adherent bowel, feeling satisfied that a second operation will give a *nil* mortality. This is not ideal surgery except in the sense that it saves life. It is just in the absence of thoroughness of this character that the general surgeon has lost more cases from appendicitis than he

should lose. The removal of a catarrhal or acutely inflamed appendix, one studded with lymph, muddy fluid or filth, is a simple and easy operation. You do not have to go very far to get it. You can cleanse that small zone, drain it and you have a *nil* mortality.

In conclusion I will allude to the reference made to Dr. Kelly's ectopic pregnancies in which he made a series of twelve vaginal incisions, loosing one patient. In one, hæmorrhage continued or he had a second hæmorrhage and removed the ectopic sac, and the patient recovered. This is a very beautiful argument in favor of the fact that the second operation was a failure. Dr. Kelly is too good an operator to resort to vaginal section for trouble of that kind. How much safer would it have been if the woman had not been exposed to a second hæmorrhage and he had not practised a vaginal operation? Dr. Kelly is too good a surgeon to tinker around the vagina. His position as a surgeon is too important. He has six hundred or perhaps a thousand visitors from the forty-five states annually, and he ought to be exceedingly careful where he drops gynecological sparrows. He is too skillful, too dextrous. Dr. Kelly ought to do all sorts of intra-abdominal operations better, blindfolded, than most men with both eyes open, as his experience is sufficiently large in dealing with such troubles. I am sorry that he has adopted the puncture method and is making trial trips in that direction.

I hope I have made myself clear as to where I stand regarding the two methods. I have done a large number of vaginal hysterectomies for malignant disease, in some of which there were serious complications of both tubes and ovaries, and I have removed them.

I remember doing a series of sixty vaginal hysterectomies without a death, and I began to feel that I ought not to lose a patient by operating by the vagina; that if I lost a patient it was purely my own fault; that it was either an error of omission or commission. I feel so now. You must be sure it is a suitable case. If you operate for puriform disease there is no reason why you should not remove suppurating tubes and ovaries in all cases. Occasionally there will be an exceptional case where everything will be adherent, omentum, small and large bowel, and you will have many bowel obstructions following such operations. In Coe's 112 vaginal hysterectomies he lost two from bowel obstruction. These cases were reported many years ago.

I thank you for the invitation to address you.

Official transactions.

C. S. BACON *Editor.*

TRANSACTIONS OF THE PHILADELPHIA OBSTETRICAL SOCIETY.

Stated Meeting, November 3, 1898.

The *President*, CHARLES P. NOBLE, M.D., in the Chair.

Myomectomy during Pregnancy: Report of a Case in Which Eleven Fibroids were successfully removed.

By A. J. DOWNES, M.D.

(See page 583.)

DISCUSSION.

Dr. E. E. MONTGOMERY: I think that the reader of the paper is to be congratulated upon the good result that has occurred in this case: the woman being operated upon during the course of pregnancy, the abortion resulting, and the patient recovering. It is certainly a gratifying result and one that we could hardly always guarantee, as the extensive injury to which the uterus must be subjected in the removal of so many growths as this would almost inevitably produce abortion and would increase very greatly the danger that a patient would suffer from septic inflammation. While this case has resulted favorably and has been successful so far as the mother is concerned, I question whether it is a course of treatment that we should prescribe in similar cases, whether we are justified in taking the risk for the patient of such an operation at that period of pregnancy. I question whether we are justified in assuming, even though one of these large growths was situated in the pelvis, that this woman could not have gone on to the completion of her pregnancy and even been delivered per vias naturales. It is well known that these growths are lifted up during the progress of the enlargement of the uterus and a growth so situated is frequently lifted out of the pelvis and the woman delivered naturally. Not infrequently in these cases where the tumor has not been lifted out of the pelvis the tumor is so situated that it may be pushed out in the beginning of labor and the woman delivered normally. The child did not have a fair chance for its life when the operation was performed at this time of the pregnancy. The

injury to the uterus required for the removal of the large number of fibroids, going, as the doctor says he had to, into the muscle wall of the organ, almost necessarily rendered an abortion a sequel of the operation. We could hardly expect that the uterus would resist the injury that had taken place to its wall in a number of places and go on to the completion of pregnancy after such an operation, so that I say that the child has not had by this procedure the chance for its life to which it had a right. The operator in such a case had an opportunity to go on to a period when the child would be viable and the operation could have been done at any time if her life seemed to be threatened by the progress of the gestation. If these growths had taken on increased activity, had grown very rapidly, had produced by their volume a pressure against the diaphragm, causing symptoms that were threatening the life of the individual, then an operation could have been done, the physician feel that he had given the child its chance. At the completion of the period when the child was viable the delivery could have taken place and the uterus have been treated subsequently by the removal or enucleation of the growths as the condition seemed to demand, so that I should feel in a case of pregnancy, in a woman with fibroid growths, that her condition demanded close observation and care, that the life of the mother should, of course, be constantly considered but, with consideration for her life, that proper consideration should also be given to the life of the second individual and interference postponed until viability or completion of pregnancy. I do not think we can take it for granted in fibroids presenting such a variety as these, for most of them are mature, that they would take on very great activity during the subsequent course of the pregnancy. It is possible that some of these smaller growths which did not reach maturity might have grown rapidly and have given the necessity for a radical procedure during the progress of the pregnancy. I do not think we can take it for granted that these growths would necessitate interference during the progress of the pregnancy, nor can we take it for granted that because the growth is low down in the pelvis it will not be lifted up as pregnancy advances.

Dr. Downes will forgive me for discussing this as I have, but I am sure in asking me to take part in the discussion he wished me to give what I considered my honest views in regard to the case, and in the discussion of such papers it should be our aim as far as possible to bring out what we believe to be right and true in the treatment. We all make errors in judgment and it is frequently much easier to

give our decision after a gentleman has made an operation than if we had been called in to see the patient first.

Dr. WILMER KRUSEN: Through the courtesy of Dr. Downes I had an opportunity of seeing this case operated on, and was very much interested in it, particularly in the operation of myomectomy done during pregnancy, or for that matter in a non-pregnant condition. I think it is one of the greatest advances in recent gynæcology that operators are doing this operation more and more frequently and learning its limitations. When I saw Dr. Downes operate on this case I was impressed with the belief that it would have been impossible for pregnancy to go on if tumors were allowed to remain. The patient would probably have aborted on account of the situation of the tumors. The tumors had undoubtedly been growing very rapidly during pregnancy and the possibility was that some of the smaller ones would also grow rapidly and interfere seriously with parturition, possibly endanger the life of the patient very much. I believe that such operations as this are indicative of gynæcological conservatism. I think Dr. Downes is to be congratulated upon the success as far as the mother was concerned. It was a serious operation, there had to be a number of incisions in the uterus. The result as far as the child is concerned is certainly to be deplored.

Dr. RICHARD C. NORRIS: In cases of fibroids complicating pregnancy the child's chances of survival should always be considered. The probability of saving the life of the child should be contrasted with the added dangers to the mother of allowing the pregnancy to go to term. I have on several occasions had to deal with fibroids complicating labor at term and I have found tumors apparently blocking up the pelvic cavity that, as labor advanced, were drawn out of the way, and permitted spontaneous termination of the labor. In cases of multiple tumors I have noted the gradual disappearance and shrinkage of the tumors after labor. This has been observed repeatedly and I think the chance should be taken into consideration when the patient can be kept under observation during her pregnancy. I believe with Dr. Montgomery that where the uterus seems to harbor a large number of fibroids none of which are large, the chances of their interfering with labor are not very great. The fact that an operation could be done at term, and even, perhaps, a myomectomy, with equally good result for the mother would influence me to wait until term and thus have an opportunity to save the child. As we deal with these problems from a conservative point of view the child's best interests should be taken into account. With the im-

proved technique of myomectomy and hysterectomy I cannot see that the danger to the mother would be increased very much at term. There was only one tumor in the lower segment of the uterus in this case that promised obstruction to labor, and it is common knowledge that similar tumors have a curious habit of getting out of the way. If Dr. Downes' case had been under my care I think I would have watched the patient throughout pregnancy and, if possible to do so, would have waited until term.

Dr. C. P. NOBLE: I think enough has been said about the obstetrical relations of fibroid tumors and I am quite in accord with Dr. Montgomery and Dr. Norris as to the chances of a pregnancy going on to term and to labor per vias naturales with multiple fibroid tumors. This operation is of interest as bearing upon the prognosis of myomectomies in general because undoubtedly the prognosis of a myomectomy is very much worse during pregnancy than in the non-pregnant condition, because the two chief factors in trouble after myomectomy are hæmorrhage and sepsis. Hæmorrhage after myomectomy during pregnancy is harder to control than in the normal condition, so that this patient being well after myomectomy speaks well for the operation. I have never deliberately done a myomectomy during pregnancy. Some years ago a young woman who was recently married was very much mortified to find that she had a very large abdomen almost immediately after being married and this brought her to consult her physician. She was some three-months' pregnant and had a pedunculated tumor which I took to be an ovarian tumor about the size of a child's head. I found that it was a pedunculated fibroid and not an ovarian tumor. The tumor had been pulled out quite vigorously and was somewhat bruised and on that account I removed it. In my case, although the wound in the uterus was comparatively small, being a pedunculated fibroid and a single growth, nevertheless, in spite of repeated doses of morphia the patient aborted. I believe that will be the usual result whenever myomectomy is done during pregnancy so that if we do myomectomy during pregnancy we can safely count upon it that the patient will abort. There have been some exceptions reported in literature, but they are distinctly exceptions, the rule is when we elect to do myomectomy practically we insure abortion.

Dr. A. J. DOWNES: This patient was prepared for operation, everything was ready, a doctor with less experience than I have was to do a hysterectomy the morning after I first saw her. A relative of this lady called on me to inquire about the nurse and stated

some facts in the case. I said without having seen her that I did not think she had tumors and that I thought she was pregnant. The patient came down to my office that afternoon. After examining her I said I did not see why a hysterectomy was justifiable. I operated on her once before and benefited her and therefore she wanted my advice. Her history and everything indicated that the growths were growing exceedingly rapidly, at the rate that sarcoma would grow. The growth that filled the pelvis was quite below the level of the cervix which was elevated high in the pelvis, it would never have gotten out of there. It could not be elevated per vaginam before the operation or per abdomen during the operation, the broad ligament had to be split and it had to be shelled out. In the week following my examination there was distinctly evident to me a very perceptible increase in growth; there was distinctly evident to the patient also a very perceptible growth and during that time she noticed a marked enlargement in the right flank. I had hardly felt this growth the first time I examined; the day of the operation it was quite prominent. It caused considerable elevation of the abdominal wall in this region. Taking all the facts into consideration, that the woman was distressed, anxious for an operation, had been prepared for one, I do not think I was assuming too much responsibility in advising myomectomy in this case. I figured it out from one growth that they were all subserous fibroids. This one growth was below and growing out from the cervix which could be traced. The distress of the woman, the almost certainty of the growth in these tumors from three sides compressing in their growth necessarily the contents of the uterus and consequently impending abortion, was the most positive indication for an operation in this case. Nobody could say that this large number of growths would be found, but the results of myomectomy during pregnancy are sufficiently good to warrant, I think, this procedure. It is far superior to the procedure which is far more common, hysterectomy during pregnancy. In the *London Lancet* of September 24th, there were three cases of hysterectomy during pregnancy for fibroids reported and there have been quite a number of such cases reported, some of them deliberate and some of them owing to a mistaken diagnosis or the non-knowledge of pregnancy. Everything considered, I think that the operation was justifiable in this particular case.

Report of a Case of Abdominal Section upon a Patient suffering from Exophthalmic Goitre.

BY CHARLES P. NOBLE, M.D.

(See page 586.)

DISCUSSION.

Dr. HAMMOND: I would like to refer to a very favorable discussion before the British Surgical Society a month or so ago, in reference to operations on patients suffering from exophthalmic goitre in which there were reported several cases where the arterial tension was favorably influenced by the administration of thymus extract. They also favorably consider it in warding off the danger that may arise from anæsthesia. At the same meeting there were several cases reported where the rapid pulse, like that referred to by Dr. Noble, was entirely controlled. If it be of service in these cases much anxiety on the part of the operator will be banished.

Dr. R. C. NORRIS: By a strange coincidence I happened to have in the wards of the Methodist Hospital a convalescent surgical patient in whom most of the symptoms of exophthalmic goitre are very marked. The exophthalmos is present to a moderate extent, but the goitre, the vibratory tremor, the profuse sweating, and the rapid heart action are very marked symptoms. The patient came to the hospital for treatment of a relaxed pelvic floor and a retroverted prolapsed uterus. I hesitated for some time before concluding to give this patient an anæsthetic. She was watched carefully during the administration of the anæsthetic and after she had been under ether ten or fifteen minutes it was noticed that her heart action was quieted, and that effect was observed throughout the rest of the operation. The cervix was partially amputated, the uterus was curetted, the pelvic floor was repaired and the Alexander operation was performed, at one sitting. She stood the anæsthetic remarkably well and, curiously enough, since the operation her cardiac action is not so rapid and her other nervous symptoms have greatly improved. This is my only experience with this complication. I have learned through the medical journals of what Dr. Hammond has just spoken but if I remember rightly it was the extract of the suprarenal capsule that was used as a vasomotor stimulant prior to the admin-

istration of ether. If I had to deal with another case requiring surgical operation and complicated with exophthalmic goitre or other condition of rapid heart, I should feel inclined to make use of the suprarenal extract. I mention my case because Dr. Noble's is similar. The operation had no ill effect whatever, but on the contrary the patient and her nervous symptoms have thereby been considerably improved.

Dr. HAMMOND: Dr. S. Solis Cohen, in his address before the County Medical Society a short time since, states that the thymus gland and suprarenal capsule act identically.

Dr. KRUSEN: The suprarenal extract was alluded to by Dr. Cohen before the County Medical Society and a series of cases were presented in which he had used it with marked benefit. It is stated to be of marked value before the administration of an anæsthetic, particularly before the administration of chloroform, as a vasomotor stimulant and a marked effect was produced. After listening to Dr. Cohen's exposition in regard to suprarenal extract, I employed it in one case and there has been remarkable decrease in size of tumor.

I would like to ask Dr. Noble how a definite diagnosis was made if there was no enlargement of gland or exophthalmos, that is, how did Dr. Daland come to the conclusion it was a case of exophthalmic goitre without these conditions being present?

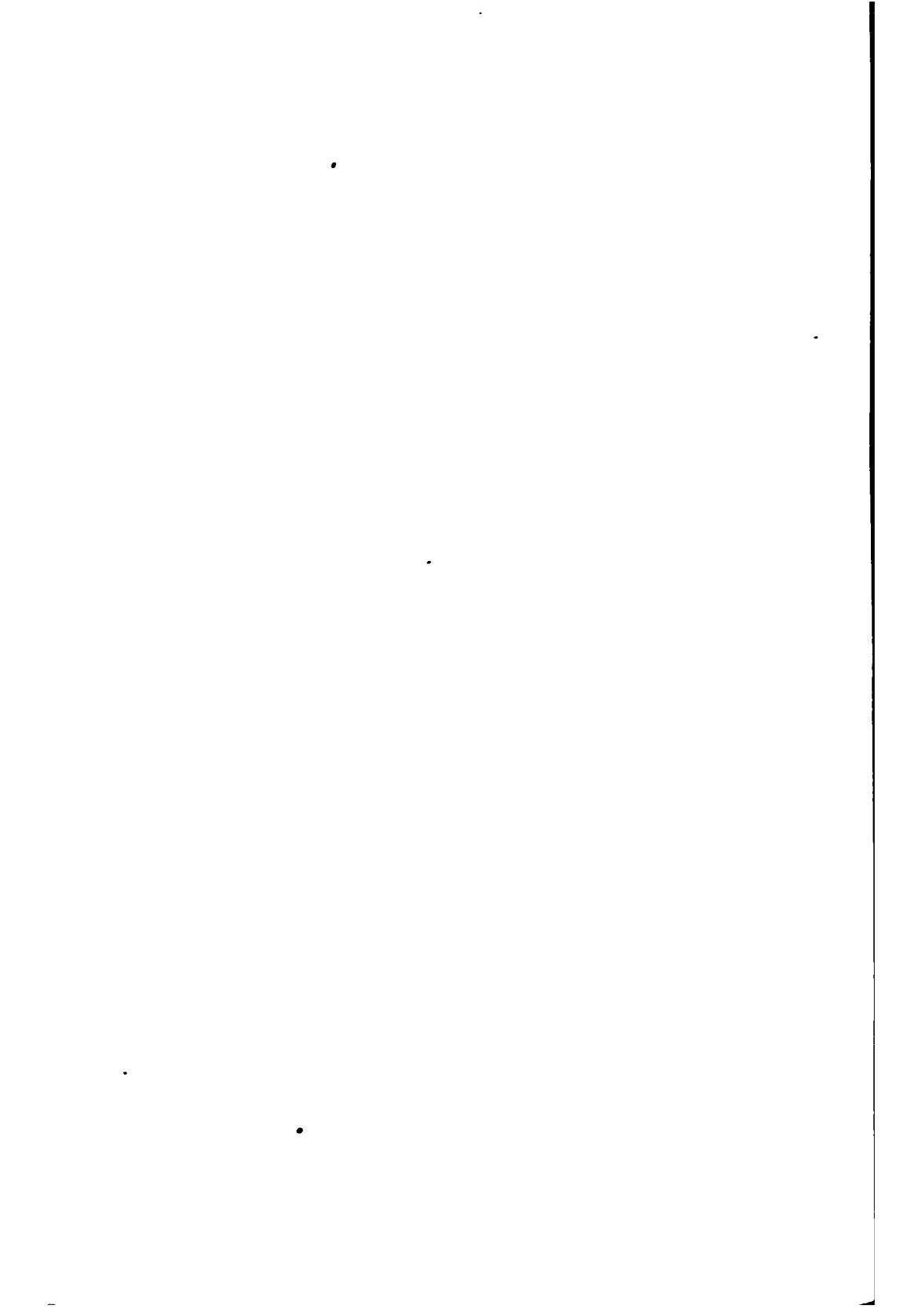
Dr. A. J. DOWNES: In May, 1896, I operated on a patient for ventral hernia who had been operated on by Bantock in England ten years before by hysterectomy. She had exophthalmos and multinodular thyroid tumors. She had very distinct exophthalmos, she had enlargement of the gland, she had excessive heart beat, she had something akin to angina pectoris, but she always maintained that her very pronounced and distressing hernia was her worst symptom. I had seen this woman and taken care of her for four or five years. I had often thought of operating on that hernia and I finally did. She did not stand the operation well. She lived four days and died without any indication of sepsis, but her heart-rate got very excessive; she had vomiting and died. There was not room, I thought, to comfortably hold the contents of her abdomen after I had repaired the hernia. The nervous disturbance induced by the operation was not compatible with life.

Dr. C. P. NOBLE: I reported this case simply to bring out discussion, to see what the experience of the other men had been. As to the diagnosis in this case it did not occur to me to attach any especial name to the rapid action of the heart. It was very evident that the

woman herself was a neurotic and this coming on after the operation I presumed that it was merely a disturbance in the innervation of the heart, but the process by which Dr. Daland arrived at that diagnosis I must leave to the specialist in internal medicine. As Basedow's disease and without exophthalmos and without goitre and diagnosis of disturbed innervation of the heart coming on from shock of the operation—you may take your choice.

Official Transactions.

FRANK W. TALLEY, M.D., *Secretary.*



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